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Editorial.

THE NEW DEGREE.

IT was said by an eminent historian that Frederick the Great learned more from his defeats than from his victories, because he was wise and patient enough to study the causes of those defeats, and so to find out where the strength—and the weakness—of the enemy lay. This is a lesson for us all; we all have to suffer defeat at some time of our lives, but we need not therefore despair. I do not despair of attaining my object, in spite of my present defeat—I have not lost faith in my cause.

My opponent, Professor McFadyean, attacks me at several different points. First, he says that the present diploma is sufficient for the purpose of obtaining for its holder the office of Veterinary Officer of Health. I do not deny this, but say that the ordinary diploma does not indicate that the holder has the special knowledge required in these modern times for a Veterinary Officer of Health. As time rolls on, and civilised life becomes more complicated and more involved, so do the demands made upon the individual become greater, so does specialisation proceed at a more rapid pace, and for these changes we must be prepared. Old institutions become worn out and must be replaced by newer; the true conservative is the man who recognises this truth and acts upon it, prudently and carefully, yet with promptitude and decision. I am prepared to admit that many, perhaps a majority, of our veterinarians have acquired the necessary knowledge *since* they qualified, and in the course of a busy life. I go even

farther, and admit that some students have, even under present conditions, qualified for the post of veterinary officer of health by extra diligence displayed during their college curriculum. But I contend that these very men would be glad to signalise themselves by undergoing a special examination, whereby they might acquire an additional distinction, and proclaim themselves fitted for the highest ranks of professional life.

Professor McFadyean proceeds—rather feebly, as it seems to me—to abandon this first point of attack at the first sign of resistance. He says, "If *anybody denies*" (the italics are mine) "that our present examinations are a sufficient test of the student's knowledge of veterinary hygiene and of the recognition of contagious and infectious diseases, then they must be made so." Well, I accept the challenge, I have accepted it by what I have said above, and I do deny what Professor McFadyean says, and so I force him to an encounter. The difference between our positions is this: Professor McFadyean wants to make the present examinations for the ordinary degree stiffer; I wish to have a special and post-graduate course crowned by a special degree, which shall be open to the *élite* of the profession, whilst leaving the ordinary degree where it is. If every student wishes to belong to the *élite*, so much the better for the profession and for the world. In such a case the old degree would die a natural and happy death; my desire is to prevent a death by violence.

Professor McFadyean expresses much tenderness and sympathy for the fellowship degree, which he thinks is in danger of its life. But supposing it were to die, might it not find a glorious resurrection in the new form of Veterinary Officer of Health? I proclaim myself a conservative, but I trust I am free from all mawkish sentimentalism, which is only a bastard form of conservatism, and I declare frankly that I would view with equanimity the death of the fellowship degree, if that were essential to the object which I have in view. I do not think it is, but I am prepared to face all eventualities.

Professor McFadyean does not seem to hold his colleagues in as high esteem as I do, for, while he thinks young student-lads capable of undertaking—for their ordinary degree—a much stiffer examination to qualify for inspectorships, he considers that there are many men who, whilst they would make the very best officers for administering the intricate and delicate duties, would yet probably never be able to obtain this new degree. What I have said above is a sufficient reply to this fancied difficulty, but I might here ask, how is a

County Council or other administrative body to distinguish between two candidates, each holding the same diploma which has no reference to the (if any) amount of knowledge as to hygiene possessed by the holder? If, on the other hand, the veterinary corporation obtains the sanction of the Government to the conferring of a new degree which shall be a sufficient guarantee of fitness, then County Councils will know how to proceed; they will give the post to the qualified man, and, if both are equally qualified, to the man who is otherwise best fitted for the post.

I should here like to refer to a rather weak—if I may not say childish—remark interjected by a member of council. He said, "Surely anyone can read a book on veterinary hygiene!" and having uttered this magisterial phrase he considered the matter settled and closed for ever. Does that councilman really think that mere reading of a book implies mastery of its contents? Does he not know that everything depends upon the reader—his character, his ability, and his previous training? One man may merely skim over a book and yet thoroughly absorb it; another will plod wearily through it, will commit whole passages of it to heart, and yet fail entirely to grasp its importance and its significance. When I was at school—a long time ago—my master used to translate a certain Greek word as "a learned fool"; I did not know at that time that such creatures existed—I have met a good many since. But apart from this, the councilman's oracular statement does not solve the difficulty; the County Councils and Municipal Bodies wish to know on trustworthy authority, as, for example, by means of a certificate signed by a body of examiners under Government control, that the candidate has not only read his book on veterinary hygiene but has marked, learnt, and inwardly digested it. The men who have honestly and carefully read the book will be only too glad to give proof of their diligence; the examiners will find out those who have read it to any purpose.

A report has reached me, which I can scarcely credit, but which carries with it so much credibility that it might serve as an explanation of Professor McFadyean's fierce attack upon Mr. Cope and myself. It stated that Professor McFadyean has taken upon himself the duty of advising cattle-owners as to the men whom they ought to select as suppressors of tuberculosis. The stock-owners are advised to submit to the professor the names of candidates and he promises to guide the selected aright in their work.

Furthermore, if a stock-owner so pleases, Professor McFadyean will select a veterinary surgeon to act under his instructions in the suppression of tuberculosis!!

I would fain believe that Professor McFadyean does not fully realise the enormity of his offence against justice and equity. But the attention of the R.C.V.S. and of the profession generally must be turned to this glaring insolence, and, if the charge can be proved, Professor McFadyean must not only be stripped of his assumed authority, but severely reprimanded for the unjustifiable assumption. Such conduct is also an insult to the Government and the Crown. We have a charter which empowers us to grant degrees after public examination of candidates by duly-appointed examiners, but Mr. McFadyean is going to change all this; he is going to rival the Czar of all the Russias in his autocratic method; he is to be the inscrutable and irresponsible power that metes out salvation or destruction to poor veterinary mortals, and we must fall down on our knees and deprecate the anger of this mysterious and all-powerful being. I feel that I am already one of the damned, but—poor Mr. Cope, the totally unbiased professional adviser of the State—where does he come in?

I might summarise the matter in the following way: a development is about to take place, a new birth, and the momentous question is, which body has the necessary vitality? And again, if several bodies show the vitality necessary for reproduction, which has the greatest, and whose offspring is most likely to survive as being the fittest? Everything, it seems to me, will depend upon the symptoms shown at birth, as the sickly infants are likely to be destroyed. The principal struggle will be between ourselves and the medicals, but we must be on our guard lest favouritism and jobbery form a third party and filch away the advantages from beneath our very noses; there is always a chance that men of vague profession or none, needy relatives of men in office, laymen out of work and tradesmen out of employment, should step into places intended for their betters and deprive us of our rights whilst degrading the position. I think our offspring have the right of primogeniture and are the rightful heirs. We ought to know more about meat inspection than medical men do, because we have for generations studied the living animals whose flesh is used for food; we know from careful study and investigation what are the diseases that afflict these animals, and the symptoms which betray their presence in the carcases. Medical men know more about the consumer and his wants

and necessities in the way of flesh-food, and they prescribe accordingly, but only veterinary men can, from their knowledge of the materials, make up these prescriptions properly. The same is the case with sanitary inspection.

But we must not wrap ourselves up in our virtue, and wait for the Board of Trade or County Councils to find out our merit and come on bended knees asking us to accept office. We must proclaim our vitality and show our capacity for development. The world is full of incompetent people, and these people are to be found everywhere and occupying the most comfortable positions; it is the duty of capable men to oust such people as interlopers, as shams, as frauds. I lately read the following passage from Emerson, which seems to me apposite to the present occasion, and which I commend to my readers: "The imbecility of men is always inviting the impudence of power." If we add to imbecility "supineness," or "indifference," we meet the present case entirely.

[It gives me much pleasure to hear that this matter was discussed at the meeting of the Lancashire Veterinary Medical Society last week, and that it was very favourably considered not only by the veterinary surgeons present but also by the members of the medical profession. I trust that other societies will also discuss it.—ED.]

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

WHEN it is intended to employ the test, the owner of the cattle should apply to the Principal of the Royal Veterinary College, Camden Town, London, N.W., giving the name of his usual Veterinary adviser, to whom printed instructions will be sent. If desired, the name of a Veterinary Surgeon in the district will be suggested.

THE Board of Agriculture have received through the Foreign Office a copy of a notice issued by the Egyptian Sanitary and Quarantine Board, inviting applications for the post of Veterinary Surgeon under the Board at Suez. The salary attached to the post commences at £E264 (about £271), per annum, and rises progressively to £E336 (about £345). Any veterinary surgeon desirous of applying for the appointment should

make application in French to the President of the Quarantine Board at Alexandria, the last date for receiving such applications being April 20th, 1899. The application should state whether the candidate is conversant with any and what foreign languages. It is to be accompanied by a diploma from a College or the State; a statement of any other qualification or testimonial: a medical certificate of health; a certificate of birth; and a written undertaking to proceed to Egypt within a month of the official announcement of the candidate's appointment to the post. Each candidate will also be expected to agree to reimburse the expenses of his passage out should he resign the service of the Quarantine Board within a year of his appointment, and three months' notice of resignation must be given.

SOME OLD FAIRY TALES OF SCIENCE.*

BY O. CHORNOCK BRADLEY.

"The old order changeth, yielding place to new."

THE penultimate year of a fast waning century is no inappropriate time in which to glance backwards along the path science has so triumphantly traversed. We are the heirs of all the ages of scientific thought, and as such ought to take an interest in the history of the growth of our heritage. A knowledge of the vicissitudes, the opposition, the battles, the victories which have been the lot of science in the past will enable us to foresee, however dimly, something of her struggles and triumphs yet to come. From the history of intellectual development we learn, further, that though the results may appear on the surface to be due to the work of the few, there is still an under-current produced by the many which materially influences the final result. We, however humble our capacities, may without egotism claim to be doing something for the advancement of science. Our work, individually considered, is trivial, insignificant, and non-essential; but so is the individual work of each coral cœlenterate. The coral reef is not produced by the energies of the chosen few, but of myriads. The coral builders have to fight against the constant beating of the waves. Scientific thought has to sustain the onslaught of popular prejudice and ignorance.

Mental inertia is one of the attributes of mankind; the

* Read before the Edinburgh Veterinary Medical Society, January 27th, 1899.

greater the change of position, and the more far-reaching its effects, the more apparent becomes the resistance.

Although this natural intellectual conservatism has its drawbacks, inasmuch as it impedes mental progress, nevertheless it has the advantage of preventing us being blown about by every wind of doctrine, sound and unsound alike.

The doctrine of the circulation of the blood—that foundation-stone of modern physiology—was met with severe and feverish opposition.

The theory of evolution was no less severely criticised, and had to fight a stern battle before being permitted to assume a position in philosophic thought. Upon the head of Darwin and his followers was heaped abuse in abundance, and had physical evidence of their dislike been permitted to them, no doubt some of his opponents would gladly have availed themselves of the permission.

Then what a hornets' nest Young raised about his ears when he first propounded his undulatory theory of light! Physicists had been satisfied to follow Newton, and strenuously opposed any change. The Newtonian theory of light consisted in the supposition that light resulted from the darting forth, from the luminous object, of minute particles, which travelled in straight lines, colour depending upon size of the particles.

Sometimes pioneers of scientific theories have been subjected to more material inconveniences than that of mere verbal abuse.

The immortal Galileo was at one time in danger of losing his life. His scientific discoveries appear to have begun at an age when most of us are only thinking of leaving school. At 18 he happened to observe the regular oscillations of a hanging lamp in the cathedral of Pisa, and from this observation sprang much of what we now know concerning the properties of the pendulum. One cannot avoid the thought that the sermon in the cathedral cannot have had any very engrossing influence on the mind of Galileo; and one is not altogether sorry that it had not. Galileo's statements that the moon is not in itself luminous, but merely reflects the solar rays; that the milky way consists of innumerable separate stars; that the earth is not the centre of the universe; and other then heterodox ideas, led to his appearance before the Inquisition at Rome, by whom it is said he was put to torture. Whether he was tortured or not is not quite certain, but the result was his recantation.

The popular idea that most great discoveries are made by

accident is apparently supported by the history of science. The "accidental" observation of the swinging lamp led to great results. The wife of Galvani "accidentally" observed movements in the limbs of a skinned frog when in contact with a scalpel. She mentioned what she had seen to her husband, and from his subsequent work electricity may be said to have sprung. Such "accidents" might have happened to anybody, but only a Galileo or a Galvani could have turned them to such good account, or have extracted from them so much that has swelled the sum of human knowledge.

Classical scholars are fond of informing us that many of the modern theories, evolution for example, had dim foreshadowings in the ancient philosophy of Greece, Egypt, Arabia, and Rome. And then they work off on us that much abused apophthegm of Solomon, "There is no new thing under the sun."

Without desiring to say that this is not true, I think we owe it to more modern workers to bear in mind that it is an easy matter to read into the words of an author a meaning which he never for a moment so much as dreamed of. Therefore, by torturing the original text—sometimes not to any very alarming extent—it is often possible to make it prophetic, even startlingly so.

The origin of all things, from the universe itself to its ultimate component parts, has always, and quite naturally, given rise to philosophic speculation. Myths have always preceded scientific hypotheses, and among primitive peoples of the present time myths still hold dominion.

It is not surprising that in these myths the earth is held to be the central figure in the grouping of the celestial bodies, and that man himself is placed at the head of the organic kingdom as the lord of creation.

Some of the geogonic myths have a beauty which reflects the poetic instincts of the people in whose midst they took origin. An ancient Japanese myth runs as follows: "While the earth is still soft, like mud, or like oil floating on the surface of water, there arises out of the mass the flag or rush called *asi*, from which there springs the land-forming god."

The Iroquois believe that a woman was tossed out of heaven and fell on a turtle, which developed into the world.

A people of British Columbia say that the earth and all that in it is proceeded from the water and the workings of a musk-rat. The musk-rat lived in the water and sought its food at the bottom; in doing so he repeatedly got his mouth

filled with mud, which he as repeatedly spat out. The mud thus accumulated formed an island whence the world developed.

A Scandinavian myth is no less interesting. From a chaos of ice, on thawing, was produced Ymir, from whose armpits sprang man and woman. A cow licked the hoar-frost and Bur arose. Odin, Vile and Ve, the children of Bur, slew the giant Ymir. "Of his flesh they formed the earth; of his blood, the seas and waters; of his bones, mountains; of his teeth, rocks and stones; of his hair, all manner of plants." In this myth man himself sprang from the armpits of Ymir, but in the majority of myths he is made from clay by some supernatural being. According to a New Zealand myth, Tiki "took red clay . . . and kneaded it with his own blood," and so made man. The Melanesians believe that man was first made of clay; but woman was made of willow-twigs. Is this a sly hit at the sexual difference of temperament?

The difference between myths and the older philosophic theories is not so great as one would expect. The Greek philosopher, Anaximander, stated that the heat of the sun, acting upon the primeval miry earth, produced little bubbles with filmy walls. These were surrounded by a prickly rind. At length they burst and, as from an egg, animals came forth, at first imperfectly formed, but ultimately becoming elaborated and perfected. Man was cast forth in the form of a fish, and as such inhabited the muddy waters until such time as he became capable of supporting himself on dry land.

That water was the original principle of all things had many exponents, among whom we may instance Thales, who lived in the seventh century B.C. Not only was water the beginning, but also the end of all things. Even the sun and stars were held to derive aliment from the sea at the time of their rising and setting.

That the earth did not move, and that the heavenly bodies described orbits about it was not doubted until the time of Copernicus, who, living in the fifteenth and sixteenth centuries, called down upon his head the anathemas of the scientific world by stating that the sun is the centre of our system, and that all the planets, including the earth, move about this centre.

The views of Copernicus were first propounded in 1543, and I need not remind you that in substance they are held to-day.

At present, our conception of the cosmos, the mundus, the physical universe—call it what you will—is one of infinity, of

unendingness. Space has no beginning and no end. Space is is infinite. Space contains systems—some known, some unknown and unknowable. Our own solar system forms but a small and insignificant part of the whole. Stars, planets, worlds, suns pervade space in unimaginable, unthinkable multitudes. Constellation upon constellation, myriads and myriads in number, stretch through millions of miles. The most powerful telescope can only penetrate a very short distance into the heavens. What worlds there may be beyond we know not, nor can we know.

Prior to Copernicus the earth was supposed to be the centre of the universe, the other planets and stars revolving round her in orderly and regular orbits. Cosmos, or the universe, was held to consist of ten heavens, each bounded by a crystalline sphere, the larger spheres enclosing the smaller, the smallest enclosing the earth. The seven inner spheres each contained a planet, and so were known as the planetary spheres. The eighth sphere was called the sphere of the fixed stars, for in it all the fixed stars were supposed to be contained. The ninth sphere was known as the crystalline and the tenth as the *Primum Mobile*, or "first moved," because its motion produced the diurnal revolution of all the nine enclosed spheres.

Although, as Masson has said, it must have been very comfortable to man to feel that he was provided with an earth for his special use, and that his earth formed the centre of a definitely bounded universe, thought could hardly be limited in this way. Naturally man must have asked himself "What is on the other side of the *Primum Mobile?*" So arose the conception of a boundless heaven of heavens, or empyrean, outside the *Primum Mobile;* in the empyrean the Divine Ruler resided.

The pre-Copernican system, thus roughly sketched, is known either as the Ptolemaic system, from the Greek astronomer Ptolemy, who lived in the second century, or the Alphonsine system, from Alphonse X. of Castille, who in the thirteenth century gave it its more elaborate form.

As astronomy sprang from astrology, so chemistry grew out of alchemy. However extravagant may have been the notions of the astrologers, those of the alchemists can hardly be relegated to a second place. The power of the stars for good or evil is quite equalled by the magic properties of the fabulous philosopher's stone and the elixir of life.

Friar Roger Bacon was of opinion that the elixir of life consisted of gold dissolved in *Aqua Regia*. Its supposed

power of changing old men into young is shown in the story he told Pope Nicholas IV. An aged Sicilian peasant was one day ploughing in his field, when his ploughshare unearthed a golden phial containing a gold-coloured fluid. Thinking this to be dew, the peasant drank it off, and at once became a hale, robust, and highly accomplished youth. The temerity of the ploughman in drinking the contents of a bottle so casually revealed is great. The credulity of Bacon in believing the story is much greater. If Pope Nicholas became somewhat impatient during the recital of the story we need not be surprised.

The Philosopher's Stone, according to Basil Valentine, had a remarkably simple composition. Salt, sulphur and mercury were all it contained, but so pure was the admixture, we are told, that its projection upon the baser metals resulted in their change into silver and gold. All the metals, Valentine said, consisted of salt, sulphur and mercury, but not in so pure a state as in the Philosopher's Stone.

The tyro in the study of chemistry will be interested to know that had he lived in the times of the alchemists he would have been required to remember four elements only—earth, air, fire and water. Even this list was considered too long by the famous Gebir, who recognised only three elements —mercury, sulphur and arsenic.

That air was an element was the belief of chemists up to comparatively recent times. Up to the end of the eighteenth century its composition was quite unknown. To Priestley was due the initial impetus which led to researches resulting in the recognition of the air's composite character.

When any combustible body burned, or when any animal breathed in the air, it was stated that "phlogiston" was passing from the burning substance or breathing animal. The presence of this "phlogiston" deprived the air of its power to support combustion and respiration. Air so contaminated was spoken of as being "phlogisticated." Priestley found, by experiment, that air contains four-fifths of its volume already "phlogisticated." He found, moreover, that phlogisticated air may be dephlogisticated by the growth in it of green plants in the presence of sunshine. Naturally there arose in his mind the question whether it would not be possible to obtain air less phlogisticated than ordinary atmospheric air; and which would, therefore, more perfectly support combustion or respiration. August 1st, 1774, was a red-letter day in the history of chemistry, for on this day Priestley succeeded in preparing oxygen. By the means of a burning

glass he decomposed what he called *mercurius calcinatus per se ;* or what we should now call mercuric oxide. The result is best and most picturesquely stated in Priestley's own words. "I presently found," he says, "that by means of this lens, air was expelled from it (the mercuric oxide) very readily . . . What surprised me more than I can express, was that a candle burned in this air with a remarkably vigorous flame."

Priestley remained in ignorance of the true properties of this new "air" until March, 1775, when he discovered that it was "between five and six times as good as the best common air I have ever met with," as he expresses it. From the fact that this new air appeared to be entirely free from "phlogiston" he called it "dephlogisticated air."

Priestley's conception of the nature of atmospheric air is decidedly quaint. He says: "There remained no doubt on my mind but that the atmospherical air, or the thing that we breathe, consists of nitrous acid and earth, with so much phlogiston as is necessary to its elasticity; and likewise so much more as is required to bring it from its state of perfect purity to the mean condition in which we find it." Priestley, indeed, considered that atmospheric air consisted of a kind of nitrate of potassium in which the potassium had been replaced by some unknown earth. A somewhat different idea from that which the modern chemist permits us to hold.

Spontaneous generation was, perhaps naturally, conceived by the ancients to be the cause of the production of the world and the animals that people it. Lucretius wrote, "with good reason the earth has gotten the name of mother, since all things are produced out of the earth. And many living creatures, even now, spring out of the earth, taking form by the rains and the heat of the sun."

From the time of Lucretius to the seventeenth century of the Christian era is a long call, but during that time there was little fundamental change in the doctrine of spontaneous generation.

The production of maggots on a piece of putrefying meat was ascribed to the meat itself by those living in and anterior to the seventeenth century. The penetrating genius of the Italian naturalist Redi caused him to doubt this view, and stimulated him to scientific experimentation. The method of Redi was simplicity itself. He covered a piece of meat with fine gauze, and found that by this means the appearance of maggots could be indefinitely deferred. He further showed

that the maggots were produced from eggs deposited on the meat by insects.

The theory of spontaneous generation thus received a check, and, now fallen upon evil days, was neglected by even its warmest advocates. It was not dead, however, and there were many to assist at its awakening when the advent of the microscope revealed hitherto unknown organisms. Organic infusions were found, in the course of a few hours, to be teeming with microscopic organic life. This could only be explained by supposing that, though the organic matter in the infusion was to all appearances dead, yet it was capable, under certain circumstances, of giving rise to microscopic animalcules. So said Needham in England and Buffon in France, both of whom had a numerous following.

When Nature has anything she wants doing she creates a man to do it, we are told. It was necessary that this fallacious doctrine should be eradicated; Spallanzani was produced to do it. He first proceeded to boil his infusions, and then seal up the vessels containing them. No organisms made their appearance. The disciples of Needham and Buffon objected that the heat had affected the air in the vessels and in some way destroyed a property necessary to the spontaneous generation of animalcules. Discord reigned among the naturalists.

Spallanzani had paved the way for subsequent workers, and certain experiments of Pouchet of Rouen led Pasteur to take up the question. Pasteur showed that the air contained "germ dust," which he demonstrated by the following experiment. He fixed a glass tube containing a plug of gun-cotton in the window of his room. By means of an aspirator air was drawn through the tube, the "germ dust" being caught in the plug of gun-cotton. The aspiration was continued for 24 hours, at the end of which time he dissolved the gun-cotton in alcohol and ether. On allowing the solution to stand a fine sediment was formed, which, when examined microscopically, was found to consist of starch granules and a large number of spores of various fungi.

Another piece of gun-cotton was next impregnated with "germ dust" in the same way. This Pasteur placed in a vessel of infusion which had been boiled, and the air over which had been subjected to a red heat. A growth resulted.

Pasteur completed the war so ably begun by Spallanzani against imperfect observation, and a consequent erroneous theory.

A kind of glorified theory of spontaneous generation is what I believe Huxley is responsible for having called Catastrophism. The occurrence of differently constructed remains of animals and plants in different geologic strata was formerly a matter of much difficulty to biologists and geologists. It was supposed that at the end of each geologic epoch the whole animal and vegetable kingdoms had been eliminated; and that at the beginning of a new epoch animals and plants had again come into existence *de novo*. It is scarcely necessary to say that the doctrine of Evolution and the revelations of Palæontology have removed the idea that there has ever been any break in the genealogy of organic life.

How the changes in the characters of plants and animals come about was a problem for a long time without satisfactory solution. Lamarck considered that all the species of animals were the result of the indirect action of changes of circumstances influencing those primitive germs spontaneously generated within the waters of the globe. Organs could be increased or atrophied by use or disuse. Change in the physiology of an animal produced change in structure. Altered circumstances resulted in altered physiology. Therefore altered circumstances caused change in structure. Contrast this Lamarckian theory with the views expressed by Darwin and now so well known.

This leads us on to recount briefly some of the views held by anatomists and physiologists of old regarding the construction and functions of the animal body.

The early history of anatomy is shrouded in obscurity; and historians are not agreed upon many points. Controversial details, however, may be left entirely out of account at this time.

When we remember that touching a dead body meant defilement among many ancient peoples, notably the Jews, we at once appreciate a formidable barrier to the advancement of anatomical knowledge among such people. Physiology, being based on anatomy, was at the same time hindered in its development. It appears probable that Æsculapius dissected animals in order to provide instruction for his pupils; but there is some doubt as to how much he contributed to sound anatomical science. His disciples, or followers, who were known as Asclepiades, are supposed to have increased their knowledge by the dissection of such animals as were offered as sacrifices in the temples in which they officiated. One of their theories is well worth remarking. All visible forms, they held, were produced from atoms of irregular form

—friable, divisible and subject to change. These, rolling in the void, clashed together and assumed new forms. So the human body consisted of an accidental combination of corpuscles of definite form; health or disease consisting in their regular or irregular motion.

Hippocrates considered that health consisted of the right constitution and proper adjustment as to quantity of the four elements of which the body was composed. The yellow bile was actively concerned in preserving the body in a healthy condition.

The arteries, said Hippocrates, contain more heat than the veins, and in them circulate the animal spirits. When we speak of a person being in "high spirits," or as having his "spirits depressed," we are making use of figures of speech, vestiges of the old animal spirit theory. Even so recently as within the last 200 years we find medical writers ascribing physiological processes to the animal or vital spirits. Mayow, writing about two centuries ago, says: "If a man takes a big dinner, all the vital spirits have to go down to the stomach in order to carry on digestion, and the man usually goes to sleep and cannot easily think; but if the man will try to think after his dinner and succeed in doing so, the vital spirits will go to his brain and do the thinking, leaving the stomach to its own devices, and consequently the food is not digested." If we substitute blood for vital spirits we find this quite in harmony with modern teaching.

To return to Hippocrates. He considered that the veins were all branches of one large venous trunk which had neither beginning nor end. The brain he describes as a gland and the head generally as acting as an aspirator which draws the moisture from the other parts of the body, doling it out again as required by the glands. The brain, however, he held was the seat of the understanding, but the soul he relegated to the left ventricle of the heart.

Digestion, according to Hippocrates, consisted in a cooking of the food by the heat of the stomach.

Plato propounded a mystic theory of the formation of the human body from exceedingly minute and delicate triangles similar to those forming the basis of fire. Flesh was a mixture of water, fire. and earth with a saline and pungent matter added. Blood filled all the vacant spaces of the body, and was separated from the aliment by the action of a curious fire produced in the stomach by respiration. The action of this fire was shown by the red colour of the blood.

Plato placed the reasoning soul in the brain, but

generosity, courage, and anger had origin in the breast where they were fanned and fed by the lungs.

Although we owe much of value to Aristotle, he showed his fallibility by falling into many errors. For example, he lavishly endows the heart with three ventricles; to the right of these the hot blood proceeded, the cold blood went to the left, and the temperate blood to the third. All nerves, moreover, arose from the heart.

Aristotle did not hold the brain of any great account. He taught that it was composed of earth and water and was of no great importance. His definition of sleep is, to say the least, somewhat fanciful. It consists, he says, in a particular change in all the organs of sense, which suspends their energy without interfering with sensations. This change results from vapours exhaled by the food which, by virtue of their lightness, ascend to the head. Here they are condensed by the cold of the brain and, falling back upon the heart, interfere with its sensibility.

Up to the time of Erasistratus the trachea was supposed to be the tube down which fluids flow when swallowed; some of these fluids, Hippocrates said, were intercepted by the spleen, the rest went on to the kidneys.

The great Galen thought that veins arose in the liver and arteries in the heart; that sensory nerves proceeded from the brain, and motor nerves from the spinal cord.

Pythagoras was of opinion that nerves, veins, and arteries were the cords of the soul; that the heart was the source of the affections, and the brain of the reasoning faculties. Expressions made use of in every-day speech remind us of this doctrine.

We have seen how much importance was attached to the presence and working of the animal spirits, a conception which died a hard and somewhat recent death. The learned Descartes, a contemporary of our own Harvey, expounded some very interesting views as to the properties and actions of these spirits. "The animal spirits," he says, "resemble a very subtle fluid, or a very pure and vivid flame, and are constantly generated in the heart, and ascend to the brain as to a sort of reservoir. Hence they pass into nerves, and are distributed to the muscles, causing contraction or relaxation, according to their quantity." "In proportion as these spirits enter the cavities of the brain, they pass thence into the pores of its substance, and from these pores into the nerves; where, according as they enter, or even only tend to enter, more or or less, into one than into another, they have the power of

altering the figure of the muscles into which the nerves are inserted, and by this means of causing all the limbs to move."

It was Descartes, it will be remembered, who placed the soul in the pineal body, where it became aware of all that was going on in all parts of the body, its information being derived from the animal spirits, which acted as messengers. The animal spirits, further, were the means by which the soul could influence the various operations of the body.

The history of the discovery of the circulation of the blood is a subject which, though hackneyed, can never become entirely uninteresting. It would be an act of supererogation to remind you that it was the English physician, William Harvey, who, as the school-boy expressed it, "first made the blood to circulate."

Certain unsatisfactory views regarding the circulation had been promulgated before the time of Harvey, but it was reserved to him to establish it on a logical basis. As we have already seen, the veins were originally considered the chief blood vessels, and their origin was held to be the liver. The arteries were supposed to contain only a very little blood mixed up with the vital spirits generated in the heart. Propulsion of the blood, it was said, was due to respiration, the pulse being evidence of contraction and relaxation of the arteries upon a mixture of blood and air, drawn into them by suction. The lungs were placed around the heart in order that ventilation and refrigeration of the blood might be the more perfectly and readily carried on.

It was Michael Servitus who first stated that the blood passed from the right to the left side of the heart by way of the lungs. Unfortunately he was unable to prove this; and his views were, consequently, not seriously entertained. Other theorists, allowing that the blood did pass from the right to the left heart, accounted for its passage by supposing that the interventricular septum was pierced by exceedingly minute porosities; porosities so minute, indeed, as to be incapable of demonstration, but sufficiently large to admit the passage of the mixture of blood and vital spirits.

It would be tedious, and at the same time quite unnecessary, to recapitulate the grounds upon which Harvey based his theory, and the experimental evidence he adduced in its support. Suffice it to say that his conclusions have stood the test of time, and the augmentation of knowledge.

It must not be supposed that Harvey was permitted quietly to enjoy the notoriety which naturally fell to his share. His

opponents were many, and some of them occupied high positions in the estimation of scientists generally. One name stands out very prominently, namely, that of the French philosopher, Descartes, who strenuously denied that the circulation was due to contraction of the heart, but ascribed it to the heat generated in that organ.

It is unfortunate that those who make the greatest discoveries seldom live to see the fruition of their labours. Harvey is a case in point. His theory was not generally believed in until some time after his death. Its importance was not recognised. It is the present that illuminates the past. We of the present can appreciate to the full the debt science owes to the work of Harvey and the justice of the honour which is now paid to his name.

The value of an historical survey of the past of science consists in demonstrating how present knowledge has gradually emerged from error and confusion. The aphorism of Bacon is well known in which he says that truth more easily comes out of error than out of confusion. The history of science affords many instances capable of illustrating this aphorism, and its study is a sure safeguard against intellectual arrogance. Many of the theories of the present will no doubt endure; but many more will fail to satisfy scientists in the future. Still, as the false theories of the past have been the progenitors of the true doctrines of to-day, so will the cherished views of the present lead up to, and give place to, the more logical conclusions of the future. "The old order changeth, yielding place to new." This in science as in everything else. And this is as it ought to be. "In knowledge," Faraday has said, "that man only is to be contemned and despised who is not in a state of transition." "Nothing is more difficult or requires more caution than philosophical deduction, nor is there anything more adverse to its accuracy than fixity of opinion."

As the earth grows by imperceptible showers of meteoric dust; as the mountains ever become less lofty and the seas less deep; so our knowledge grows by infinitesimal increments, our errors lessen, and our voids of ignorance diminish.

"Men, my brothers, men, the workers, ever reaping something new;
That which they have done but earnest of the things that they shall do."

* * * * * *

"Not in vain the distance beacons—forward, forward let us range.
Let the great world spin for ever down the ringing grooves of change."

GLANDERS.

THE Board of Agriculture has appointed a Departmental Committee to inquire into and report upon the working of the Diseases of Animals Acts in so far as they relate to glanders, and to consider whether any more effective measures can with advantage be taken to prevent the spread of that disease. The committee will consist of the following gentlemen, viz.:—Lord Stanley, M.P., chairman; Mr. Lloyd Baxendale; Mr. Samuel Chisholm; Mr. William Job Collins, M.D., J.P.; Lieut-Col. Charles Frederick Colville; Mr. Alexander Curtis Cope, M.R.C.V.S., Chief Veterinary Officer, Board of Agriculture; Mr. Lawrence Hardy, M.P.; Mr. John Maclolm, F.R.C.V.S.; and Major John Trenchard Tennant, one of the Assistant Secretaries of the Board of Agriculture. Captain Chamberlain, of the Board of Agriculture, will act as secretary to the committee.

ON THE RELATIONS WHICH EXIST BETWEEN HUMAN TUBERCULOSIS AND BOVINE TUBERCULOSIS.*

BY PROFESSOR ED. NOCARD, PROFESSOR AT THE VETERINARY SCHOOL OF ALFORT, FRANCE.

Translated from the "Annals of the Pasteur Institute," September, 1898.

BY MAZYCK P. RAVENEL, M.D.

(Bacteriological Laboratory of the State Livestock Sanitary Board of Pennsylvania.)

THE identity of tuberculosis as seen in all kinds of mammifers is no longer questioned. There is still some discussion as to the relations existing between the bacilli found in tuberculosis of man and avian tuberculosis. Following Rivolta, Maffucci, Straus, and Gamaleia, many writers insist that these are two distinct species of microbes. Their arguments may be summed up as follows:—

1. The appearances of the culture are different: those of human tuberculosis are dry, scaly, hard to break up; those of avian tuberculosis are soft, thick, unctuous, folded, and are easily spread without much pressure; they still grow at 43° C., at which temperature the human bacillus ceases to grow.

* Read before the Fourth Congress for the Study of Tuberculosis, Paris, July 30th, 1898.

2. As a rule, we cannot transmit the tuberculosis of mammifers to chickens, let the mode of inoculation be what it may.

On the other hand, certain mammifers are refractory to avian tuberculosis. The dog is one of these; the guinea-pig resists subcutaneous inoculation of the avian tuberculosis, and when it succumbs to intraperitoneal inoculation it shows lesions which are very different from those caused by the human bacillus.

Against these arguments we may object that, in spite of the difference in appearance, cultures from human and avian tuberculosis produce a tuberculosis which is identical; that sometimes we succeed in producing tuberculosis in chickens by inoculating them with human tuberculosis, and that this tuberculosis is then inoculable in series (Ballinger, Koch, Nocard, Cadiot, Gilbert and Roger, Courmont and Dor); that there are some mammifers which are as susceptible to avian tuberculosis as to human tuberculosis, and, after a few passages, the lesions produced by one and the other are identical. Such is the case with the rabbit.

I have shown that it is the same with the horse. The horse, which is so resistant to experimental tuberculosis, becomes tuberculous quite frequently under natural conditions. The disease appears in it under two quite distinct clinical forms. In one form, much the most frequent, the lesions affect the organs of the abdominal cavity first, the intestines, mesenteric and sublumbar glands, the spleen, liver, kidneys, etc.; the lungs are affected in the last stage of the disease, and the pulmonary lesion is always of recent date. In the other form, on the contrary, the pulmonary lesion is the primary one; it is, moreover, of a very variable type, and only spreads to the abdominal organs very late in the disease. It is some time since I pointed out the differential symptoms of these two types of tuberculosis in the horse; quite recently I have been able to establish the etiology of these types, which are so different clinically. While primary pulmonary tuberculosis is caused by a bacillus identical with that of human tuberculosis, it is a bacillus of the avian type, much modified by its passage through the organism of the horse, which provokes the abdominal type of tuberculosis in that animal.

The horse and the rabbit are not the only mammifiers which are able to contract avian tuberculosis. A few years since I was able to study some tuberculous sputum, inoculation of which, while rapidly fatal for the rabbit, rarely killed the guinea-pig; but the guinea-pigs which succumbed to the

inoculation of this sputum showed, at the autopsy, lesions which closely approached those of avian tuberculosis. I was able to obtain cultures of this bacillus by sowing plentifully the pulp of the spleen of rabbits which had died after intravenous inoculation ; these cultures were identical with those of avian tuberculosis. However, chickens inoculated with these cultures for the most part resisted, whatever the method of inoculation employed ; but those which succumbed showed lesions like those of the natural disease. Here, again, the passage through the human organism had profundly modified the virulence of the bacillus. Drüse, Pansini, and Johne have published analogous observations, both in man and in cattle.

On the other hand, there are a certain number of well-attested facts on record where tuberculosis has appeared in barnyards several months after they have been put in charge of phthisical attendants. It seemed evident that the poultry became infected by eating the tuberculous sputa.

There are other analogous facts concerning chickens raised about abattoirs where they are allowed to feed on the condemned meats, of which tuberculous viscera always form the largest part. I am aware that Straus and Wurtz did not succeed in making chickens tuberculous by compelling them to ingest enormous quantities of the sputum of phthisical persons, For my part, I have not been more successful when obtaining the matter for ingestion from cows, pigs, or tuberculous horses. But can we be sure of obtaining experimentally all the conditions of natural contagion ? Experiments are always carried out on only a small number of subjects, while in the cases cited, the barnyards infected contained a considerable number, several hundred, for the most part. A single subject in a condition of least resistance may allow invasion by the bacilli from man or from cattle, and we can conceive how these bacilli, acclimated to the organism of the fowl, may in turn be transmitted more easily to the other inhabitants of the barnyard.

I have often discussed this question with my old friend, the much-lamented Professor Straus, but I was never able to shake his convictions. " I freely admit," he said to me, " the truth of the facts you bring forward ; the rabbit, horse, cow, even man himself, can contract avian tuberculosis, like human tuberculosis. Does this prove that these tuberculoses are identical ? When you have transformed the human bacillus into the avian bacillus I will avow myself convinced."

I believe that I have succeeded in doing this. I give the method :

We know how Metchnikoff, Roux, and Salimbeni have, in their fine work on the toxin of cholera, produced cultures *in vivo* in sacks of collodion. This ingenious method has quite recently enabled us to obtain pure cultures of the organism of contagious pleuro-pneumonia of the bovine species, which up to this time had baffled all research. It occurred to me to try this method with Koch's bacillus. This study is far from being completed; it has, however, already given some definite results on the subject-matter of my communication. I will recall briefly the principles of the process. Small sacks of collodion with very thin walls are prepared; after sterilization in the autoclave they are filled with bouillon previously sown with the germ or the virulent matter to be studied; they are closed securely, then intoduced into the peritoneal cavity of a fresh animal, guinea-pig, rabbit, dog, sheep, cow, chicken, etc. One soon learns to execute all the manipulations without contamination, and not for an instant does the animal seem to suffer, either from the operation or from the presence of the sacks in the peritoneal cavity.

After a variable time, from a few days to several months, according to the character of the microbe studied, the animal is killed; the sack is found in some part of the peritoneal cavity, enveloped in a more or less thick layer of fibrin and cells of young fibrous tissue, from which we can easily enucleate it. When the experimental animal and the culture-liquid have been well chosen, surprising results are obtained, which, however, are easy to interpret. The wall of collodion affords an impregnable barrier both to microbes and the cells; the microbes cannot get out of the sack, but they are able to multiply there in perfect security, for the cells not being able to reach them, they are safe from phagocytic action. On the other hand, this wall, which is impermeable to microbes and cells, can be traversed by liquids and by substances in solution; it forms a perfect osmotic membrane, causing about it changes which profoundly modify the liquid first enclosed in it; substances elaborated by the microbes can diffuse themselves without, and when they are sufficiently active may lead to the death of the subject or to accidents of intoxication more or less grave, while not a single microbe has invaded the tissues; in any case it is a condition favorable to culture; microbial autointoxication is diminished if not suppressed. Finally, the products of the organism of the subject penetrate the sack, which may or may not be favorable to the growth of the microbe; the penetration of these

products is always slow and gradual; little by little the microbe grows accustomed to the new medium; and when it is taken from the sack which has protected it from phagocytic action it is much better prepared to develop in the medium, at first hostile or refractory, which the incubator animal represents.

With these facts as a starting-point, I have attempted to obtain cultures of the bacillus of human tuberculosis in collodion sacks inserted into the peritoneum of the chicken. To succeed in this I have found it necessary: 1. To fill my sacks with a thick emulsion of a young culture, preferably obtained from glycerinated potatoe. 2. To open the sacks only after a minimum period of four months (the longer the stay of the sack in the peritoneum the more marked are the changes in the bacillus being incubated). 3. Finally, to operate on a sufficiently large number of chickens each time, rupture of the sack being more to be feared in proportion as the experiment is prolonged.

At the end of this work will be found a summary of my experiments, at least of those which I have been able to bring to a successful end before the assembling of this congress.

When the incubating animal is killed in order to regain the sack which has been inserted in it, the sack usually appears collapsed, more or less completely empty of liquid; it contains only a sort of slime, more or less thick, made up entirely of the bacilli of Koch. These bacilli are usually alive; when plentifully sown on glycerinated potato or agar they often give quite a feeble growth in isolated colonies, subcultures from which grow better and more quickly.

A curious thing is that when the collodion sack has remained for a long time in the peritoneal cavity of the chicken, the cultures obtained present all the characters of the avian type; they are soft, plentiful, unctuous, folded, easy to break up, and are easily spread on all media.

The characters of the original bacillus are thus profoundly modified by contact with the humours of the fowl. What has happened to its virulence? Inoculated under the skin the guinea-pig resists; sometimes a small abscess is formed at the point of inoculation, which opens and heals spontaneously; sometimes, also, the related glands become hypertrophied and indurated, but the disease ends there. The pig remains well, it gains weight, and when killed no appreciable lesion is found.

If the inoculation is intraperitoneal, in more than half of the cases it will cause death. At the autopsy a fibrinous

ascites is found; sometimes a crop of caseous granulations on the peritoneum; more often small bacillary purulent foci of the omentum; very frequently the spleen is enlarged in all dimensions, red, soft, friable, infiltrated by some large rounded nodules, white, caseous, or purulent. One never sees those well-marked degenerations which are characteristic of the Villemin type of tuberculosis in the guinea-pig.

The lung and the liver are generally unaffected. On the whole, the lesions resemble closely those produced by inoculation with avian tuberculosis.

The rabbit, inoculated in the aural vein, dies rapidly, in from six to ten weeks at most; it is very much emaciated; it shows at autopsy an intense miliary tuberculosis, most marked at times in the lungs, at times in the spleen. Let us inoculate a little of this splenic pulp into a second rabbit by the same method—it dies much more quickly, with lesions of tubercular septicæmia, with no apparent granulations, the pulp of the liver and spleen, and the marrow of the bones constituting, as it were, a pure culture of incredible richness, of the bacillus of Koch.

These results are identical with those obtained by intravenous inoculation of cultures or of the products of avian tuberculosis. Chickens, on the contrary, resist inoculation of the contents of the sack, whatever the method of inoculation —ingestion, intraperitoneal, or intravenous.

It seems, then, that the modifications which the bacillus has undergone, and which are shown by the appearance of the cultures and the effects of inoculation on the rabbit and guinea-pig, are not sufficient to enable it to overcome the resistance of the chicken. Perhaps we may accomplish this by multiplying the passage in the collodion sacks so that the length of time during which the bacillus is in contact with the humours of the chicken, but protected from the phagocytes, will be doubled or trebled.

Let us again fill sacks of collodion with the young culture obtained from the first sacks, and put them into the peritoneal cavity of other chickens. After four, five, or six months, we will find them, as before, half filled with bacillary mortar, a study of which will give much the same results as obtained before. In cultures we obtain growths identical with those of avian tuberculosis more certainly and more quickly. Inoculations of guinea-pigs and rabbits provokes lesions more closely resembling those of the avian type, but it remains without effect on chickens.

Let us repeat the experiment a third time: We will now

accomplish our purpose. The bacillary sediment taken from the sacks after a stay from six to eight months in the peritoneal cavity of the chicken will be able to kill chickens (inoculated into the veins or peritoneum) with lesions identical with those of the natural disease.

In one of my experiments this transformation of the virulence of the bacillus was made quite naturally and much more quickly than in the period just given.

On January 11, 1897, a vigorous cock received into its peritoneal cavity a collodion sack filled with a young culture of bovine tuberculosis. (This culture, obtained from a case of tubercular mammatis, had all the characters of human tuberculosis; it killed rabbits and guinea-pigs with identical lesions; it had no appreciable effect on chickens).

For a long time the cock remained in good health, fat and vigorous; but all at once it began to waste away. This occurred toward the end of September. Its comb grew pale, flabby and soft, and fell to one side. Its condition grew worse, and the end seeming to be near, I killed him on October 28th, 1897, nearly 10 months after the insertion of the sack.

At the autopsy I found about the left testicle an irregular mass, about the size of a pigeon's egg, and sarcomatous in appearance, dotted with little caseous foci full of bacilli; the peritoneum was covered with tuberculous granulations, grayish or somewhat caseous at the central part; the liver and spleen were trebled in size, and packed with like granulations. At the centre of the tumour I found the cullodion sack, much broken at the point where it is joined to the glass. It seemed to me that the sack had been ruptured at a time when the bacilli, grown accustomed to live and grow in coutact with the humours of the fowl, were able to resist the phagocytic action of its cells, and to cause the relatively recent tubercular lesions which the autopsy revealed.

No one could claim that this cock was tuberculous at the time of the insertion of the sack—that is to say, almost 10 months before its death. Its long survival, the recent age of the lesions observed, which manifestly arose from the tumour formed around the ruptured sack, make such an opinion untenable. But what completely refutes it is the fact that two chickens which were inoculated with an emulsion of the splenic pulp of the tuberculous cock—one in the wing vein and the other in the perotoneal cavity—remained quite well, and, when killed, on the 12th of May and 28th of July, 1898, showed no lesions whatever. If the material inoculated had been of

avian origin these two fowls would have rapidly become tuberculous.

I trust that I have convinced you that it is possible to give to the bacillus of human tuberculosis the biological characters and the virulence which characterise the bacillus of avian tuberculosis. You will, then, conclude with me that these two bacilli, so different in appearance, are, however, only two varieties of the same species.

ANATOMICAL NOMENCLATURE

THAT veterinary anatomical nomenclature is in a satisfactory state is more than the most optimistic could say. Its state in the British text-books and schools could scarcely be described as other than chaotic. Nor is the condition elsewhere to be counted much better. In Britain, at least, the veterinary anatomist of old seems to have entirely overlooked the fact that the animal with which he had to deal was only one member of a great kingdom. His descendants have been similarly narrow-sighted, though, fortunately, to a less degree. The result has been a crop of terms peculiar to veterinary anatomy, and only with difficulty comprehensible by the comparative anatomist.

The situation has been rendered even more difficult by each new-comer substituting or adding as pleased his fancy, until, at last, an outsider desiring to consult works by veterinary anatomists is landed in a quagmire of terms from which, when once extricated, he is apt to turn with disgust.

The time has arrived when a change is demanded. In August of the present year, and in Baden-Baden, a system of nomenclature is to be adopted which it is the hope of those moving in the matter may become universal. Whether the efforts of the international congress will result in a terminology which will be universally accepted may be very much doubted. A similar effort was made some years ago by the Anatomical Society of Germany, but, beneficial as their work was as a whole, yet their technical terms have not become universal, nor anything like it. A few months ago the neurologists of America met in conference to consider a system of nomenclature in some points much at variance with that of the German Society. Not only did the Americans differ from the Germans but even among themselves.

In the light, therefore, of the past we may fairly reasonably predict that the congress of the near future will not be entirely successful in its efforts.

In order to produce any real good it would seem necessary that anatomists as a whole—human, comparative, and veterinary—should form themselves into an international, or a universal body, and consider the nomenclature as applied to anatomy as a whole, and not as applied to any special department of it. Even were this possible, the most sanguine would hesitate in prophesying that their conclusions would be universally accepted. Human nature as at present constituted will not be bound by cast-iron laws stipulating by what names things shall be known.

Whatever the result of the work of the Baden-Baden Congress, whether their labours are fruitful or not, the mere fact that the subject has been approached cannot fail to be of benefit to veterinary anatomy. That their work will be criticised, unjustly as well as justly, goes without saying. It would be well if each one concerned in the production of the new nomenclature could clothe himself with a pachydermatous mental vestment, so that the quips and sneers of opponents might fall unheeded. While not expecting that order will spring suddenly from chaos, yet those who have at heart the advancement of veterinary science, will extend their sympathy to the workers, and hope that prosperity may attend the work.

TUBERCULOSIS.

It would be as well for veterinary surgeons throughout the country, when asked to advise authorities as to the application of the tuberculin test, to remember that there are in this world many unscrupulous people.

It has come to my knowledge recently that cows are being "fortified" with tuberculin so that if they come to be tested by a purchaser, or on behalf of an "authority," they will not react, and are consequently considered free from tuberculosis.

Government should at once step in and take entire control of the manufacture and sale of tuberculin—and it should only be permitted to be used by certain persons. Until this is done one can never be sure as to whether or not a strange animal has been "fortified."

Cases.

DILATATION AND RUPTURE OF THE ŒSOPHAGUS IN AN OX.

BY JAS. MCPHAIL, ESQ., M.R.C.V.S., INSPECTOR OF MARKETS, EDINBURGH.

IN a slaughterhouse one meets with some curious *post-mortem* lesions in animals showing the signs of health, and the following is certainly one of them :—

An Aberdeen-Angus bullock, the property of a large butchering company, was sent to be slaughtered. The beast was eating fairly, but yet not fattening like it ought to, and was killed before being quite finished off on that account.

The abdominal organs were normal.

On opening the chest a swelling was observed just in front of the diaphragm. This was seen to be the œsophagus greatly distended.

The muscular coat was ruptured, and the mucous coat had protruded and formed a dilatation. In this there was a tear about three inches long which was plugged by a firm mass of chewed straw, which firmly closed the orifice.

The œsophagus on each side of the swelling was much thickened both in its muscular and mucous coats. I could not ascertain that there was any history of a probang having been passed, but the nature of the lesion certainly suggested that this was a likely cause ; still rough, prickly clover is supposed to sometimes induce the condition.

It is peculiar that the beast did not roar or show other signs of respiratory trouble, nor was there tympany, or, in fact, any symptom of indigestion.

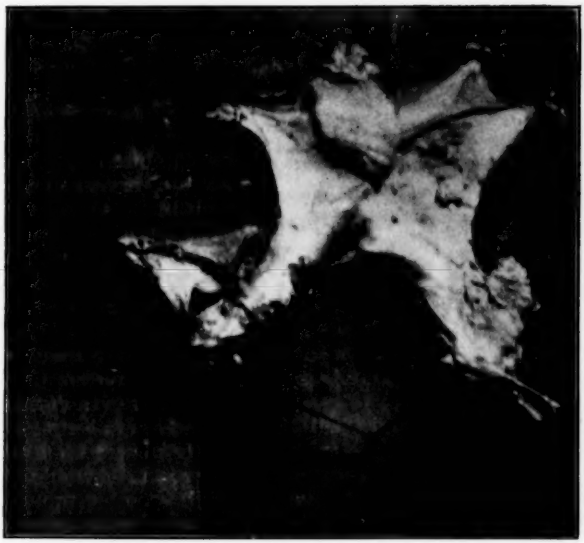
A fair quantity of food was taken, as I have stated, and the only noticeable thing was lack of improvement. One would have thought that fluid would have found its ways into the chest and set up pleurisy, but there was no trace of such.

TUBERCULOSIS OF THE OVARIES AND UTERUS AND NYMPHOMANIA.

BY THE SAME.

AS I was able to obtain the history of this case prior to slaughter, it may prove interesting to your readers. A cow was bought seven months ago in the Edinburgh market. She had calved a few days before purchase, and went on satisfactorily for four months, milking and feeding well. She then commenced bulling and kept continuously in this state. She

went oxy and for the last two months fell away in condition considerably. She was often greatly excited, showing signs of œstrum, roaring, and on some occasions trying to get over the trevis. She was sent in for slaughter, and interest being aroused she was examined prior to felling. She was a narrow-chested cow, in poor condition, temperature 102·4. She had a decided "lift" in respiration, and her udder was suspicious of tubercle. In the one hind quarter there were some hard nodular masses high up near the groin, and the lymphatic glands were indurated and large. It was stated to the owner

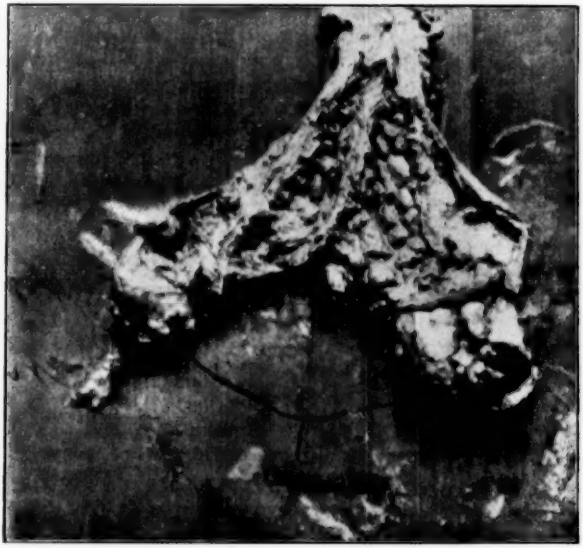


that the cow probably had "Rats" (local name for tubercle), and that the bulling was likely due to the ovaries being affected by the disease.

On being slaughtered the cow was found to be absolutely rotten from neck to tail. The lungs a knobbed mass of tubercles, with huge aggregations on the pleura and peritoneum. The bowels were extensively affected by tubercular ulceration. Liver, spleen, and kidneys were the seat of tubercules. The uterus had many nodules, and each of the ovaries was converted into a tuberculous tumour the size of a large orange and partly filled with pus. The capsule of the

ovary was distended and had numerous tubercular nodules on its exterior. The udder was also affected.

Of the two photographs, No. 1 shows the appearance presented by the uterus and ovaries while still intact, and



No. 2 that of the uterus laid open. A multitude of tubercles on the cotyledons and general surface of the mucous membrane is well seen.

Correspondence.

To the Editor of THE VETERINARY JOURNAL.

FAKING OR FAIKING.

DEAR SIR,—Your interesting note on this subject throws quite a new light on the term, at least for Southrons, who find it difficult to believe that the language in common use on your side of the border is anything more than bad English, though Scots take so much pride in a dialect rendered immortal by Burns and others.

Again, we have been brought up with a profound reverence for a nation which was at one time a hundred years in advance

of us in general education, and accept your *obiter dicta* with profound respect, even in matters outside the covers of those standard works on medicine and surgery, which the older members have absorbed with profit to themselves and clients.

It happens, however, that in the case of the word "faking" you have an older rival, who, being a Southron, must needs go to the East for the origin of all human learning. I refer to the author of "Ingoldsby Legends," who gives the following footnote in the "Lay of St. Aloys."

"'Nix my dolly pals, fake away'—words of deep and mysterious import in the ancient language of Upper Egypt, and recently inscribed on the sacred standard of Mehemet Ali. They are supposed to intimate, to the initiated in the art of abstraction, the absence of all human observation, and to suggest the propriety of making use of their time—and fingers."—Yours faithfully,

HAROLD LEEVEY,
Bridge Lodge, Burgess Hill,
Sussex.

These poor Southrons—how innocent and how ignorant they are! Our language a mere dialect, merely bad English! As if the language of southern Britain were not a corrupt and somewhat gallicised form of the grand old language still spoken in the north!

We are glad that our correspondent is, however, so modest, and we are all the more inclined to deal gently with him on this account. Let him not be deceived by the Oriental glamour of "Thomas Ingoldsby." We have not much time for the pursuit of our philological studies, but we are quite prepared to believe that "fake" is a derivative from our old Latin friend "facere," which we in Scotland—like all other advanced scholars—pronounce "fakere." There is something delightfully vague about this word, with its hundred different meanings, which makes it a convenient resort for the destitute philologist.

We feel a fatherly pity for our amiable correspondent, and we thank him for his kindly letter—which, however, only confirms us in our opinion that the capital of the country ought to be Edinburgh, not London. We think seriously of advising Her Majesty's Ministers to hold their sittings in this city, where they will always be able to obtain our advice on the country—and its language—at a moment's notice.

ED.—*V. J.*]

Reviews.

THE fourteenth Annual Report of the United States Bureau of Animal Industry, containing articles on sheep-scab, anthrax, rabies, and abstracts from several bulletins issued by experiment stations, bears eloquent testimony to the thoroughness and enthusiasm with which such work is conducted in the United States. The work is supported by the Government by means of liberal money grants, and from the excellence of the results, both on the scientific and practical side, there is clear proof that the money is well spent.

Perhaps the most interesting article in the volume is an exhaustive report on sheep-scab by Messrs. Salmon and Stiles. Of the four scab diseases of sheep, common sheep-scab (*Psoroptes communis*), head-scab (*Sarcoptes*), foot-scab (*Chorioptes*), and the follicular scab of the eyelids (*Demodex*), the first is, as with us, far the most common and the cause of much loss.

After giving a general *resumé* of the appearance and life-history of *Psortes cammunis*, the report gives a summary of various dips—dipping being far and away the most satisfactory method of treatment for such scab—and as the recommendations are the results of much observation and large experiment some of them may be usefully detailed here. The two dips most praised both have as one of their ingredients sulphur. One is the tobacco and sulphur dip with the following formula :—

Tobacco leaves	1 lb.
Flowers of sulphur	1 lb.
Water	6 gallons.

How prepared.—A. Infuse the tobacco. Place one pound of good leaf or manufactured tobacco for every six gallons of dip desired in a covered boiler of cold or lukewarm water, and allow it to stand for twenty-four hours ; on the evening before dipping bring the water to near boiling point for an instant, then remove the fire and allow the infusion to stand overnight.

B. Thoroughly mix the sulphur (1 lb. to every 6 gallons of dip) with the hand in a bucket of water to the consistency of gruel.

C. When ready to dip thoroughly strain the tobacco infusion from the leaves by pressure, mix the liquid with the sulphur gruel, and enough water to make the required amount of dip ; and thoroughly stir the entire mixture.

Lime and Sulphur Dip.

There are numerous formulæ :—

Flowers of sulphur	24 lbs.
Unslaked lime	8 lbs.
Water	100 gallons.

This is recommended for fresh scab. For very hard scab the recommended formulæ is :—

Flowers of sulphur	33 lbs.
Unslaked lime	11 lbs.
Water	100 gallons.

How to prepare.—1. Take 8 to 11 lbs. of unslaked lime, place in a mortar box or pail of some kind, and add enough water to slake the lime and form a paste.

2. Sift into this lime-paste three times as many pounds of flowers of sulphur as used of lime, and stir the mixture well. Let the lime and sulphur be both carefully weighed.

3. Place the sulphur-lime-paste in a kettle or boiler, with about 25 to 30 gallons of boiling water, and boil the mixture for two hours at least, stirring the liquid and sediment. The boiling should be continued till the sulphur disappears or almost disappears from the surface. The longer the solution boils the less caustic the ooze becomes.

4. Pour the mixture and sediment into a tub placed near the dipping vat, and provided with a bung-hole about four inches from the bottom, and allow ample time (several hours) to settle.

5. When fully settled, draw off the clear liquid into the dipping vat, and add enough warm water to make 100 gallons. *Under no circumstances should the sediment be used for dipping purposes.* Not only is the lime and sulphur dip a very effective one, it is also a cheap one, but it should never be forgotten that, made carelessly or used carelessly, great injury may be done.

Mention is also made of arsenical dips and carbolic dips, both of which are well known to our own practitioners.

It should be remembered that as the eggs of the scab mite may not be killed by a dip, a second dip should follow any time after the seventh day, preferably on the 10th, 11th, or 12th, so as to kill the mites that have hatched in the interval from the eggs unhatched at the first time of dipping.

Another important practical point in measures against scab has relation to the vitality of the pests. As the mites can live for a considerable time away from their hosts, sheds

where scabby sheep have been kept should be thoroughly cleaned and disinfected, and should be kept unused for at least a month—two is better if possible—before clean sheep are placed in them, and fields that have held scabby sheep should be allowed to stand empty for a month, at least, before clean sheep are placed in them.

The article is illustrated by plates of attacked sheep and of the pest, and many pictures of dipping plant.

Elsewhere in the volume it is mentioned that to destroy the cattle ticks which spread the infection of Texas fever, paraffin oil has been used successfully, and without greatly irritating the skin of the animals, which are dipped twice in it.

ENCYCLOPEDIE CADEAC PATHOLOGIE INTERNE DES ANIMAUX DOMESTIQUES.

BAILLIERE ET FILS, PARIS.

THIS is the sixth volume of the series, and is devoted to a consideration of diseases of the blood, general diseases and diseases of the urinary apparatus. This book is no way inferior to the excellent manuals that have preceded it.

Malaria of the horse is described, and a mortality of 90 per cent. of Algerian horses in the Soudan is noted. Infection is said to take place mainly by the respiratory tract, and biting insects are not credited with an etiological *rôle* in the disease, and again in Texas Fever the only part played by the tick in propagating the malady is said to be the pain produced by its punctures giving rise to scratching and thereby enabling the beast to inoculate itself. The observations of Koch and others appear to be lightly held by the author, it seems.

In describing purpura the statement is made that this disease very rarely arises as a primary condition. Mr. Roalfe Cox has stated that at one time purpura was by no means uncommon as a primary disease among horses in London, and quite recently we had an example of it. A cart-horse was fired for spavin and was kept under observation for some weeks until ready for work. A week after he was discharged the horse was found to be suffering from a swollen leg, and developed a well-marked and very severe attack of purpura. We can hardly agree to the dictum that more minute research will enable one to place in evidence the bacillus of Koch in the most part of the lesions regarded as lymphadeuomas. However alike the lesion of tuberculosis of the spleen of the horse may be to lymphadeuoma of that organ, it is certain

that when the tumours are due to tubercle nothing is easier than to find countless bacilli, while in lymphadeuoma the most minute search gives negative results.

Extracts from Foreign Journals.

A REPRODUCTIVE MULE.

An English army veterinarian, Mr. W. D. Nunn, of Simla, communicates to the *Field* a noteworthy case. It concerns an authentic mule, which authentically gave birth to a foal. The mule, as we all know, is a sterile animal, and the fertility of this Indian mule is calculated to cause surprise. "As far as we can judge from exact observations," says Tegetmeier and Sutherland, "the mule, male or female, is absolutely sterile." Now and again, it is true, one hears of a female mule giving birth to some offspring or other, but the cases are very rare and are generally regarded with suspicion. Mr. Hayes speaks in the same way, asserting the absolute sterility of the products of the cross between horse and ass, and attributing the cases in which the female mule seemed fertile to a telegonic influence. These supposed mules, whose fertility is a certain fact, are really mares born from dams which were covered by asses before conception: there has been "infection" or telegony, and the product of the orthodox union has been influenced by the former union of an adulterous type: the mare has been once "infected" by the ass, and the product of the subsequent connection has been infected by this influence. M. Ayrault, who is engaged in the mule-dealing business at Poitou, says that an authentic case of the fertility of the mule has never been observed in that province, though the animals of this race are often covered by stallions. On the other hand, the case has been cited of a mule at the Jardin d'Acclimatation, at Paris, which was said to have been fertile with both ass and horse in turn. It will be noticed, however, that the question is a different one now; it is not a question any longer of fertility between mule and mule, but of the fertility between mule and ass or mule and horse. But even the case of the Jardin d'Acclimatation has seemed somewhat suspicious. The "mule" character of the animal which was shown to be fertile is very contestable. There is scarcely anything mulish about it except the ears, and on the other hand its history is almost completely unknown. There are no certain facts as to the conditions under which it was

born. Its parents are unknown; the only thing we know is that the Algerians who sold it to the Jardin gave out that it was a mule. And even in this case telegony might quite well have a bearing; perhaps the mother of this supposed mule before giving it birth had been fertilized by an ass and had produced a genuine mule. The pseudo-mule (the second product), would owe its characteristics to infection, to the former *mésalliance;* it would really be a mare, with the appearance of a mule, and hence it would no longer be permissible to speak of this case as being one of fertility in the mule.

Other cases in which the possibility of the fertility of the mule has been talked of ought to be explained in a different way; that is, those cases where it is said that a mule has given birth to a foal, the proof being merely that the mule gives suck. We need scarcely remark how trivial is the value of observations of this kind. For we often see *males* of different species (rams in particular) suckle in the most regular manner, and no one thinks of charging them with having brought forth offspring! One of these cases was announced in 1880. It concerned an aged mule, large-limbed, of fine appearance, which had also taken prizes. This mule had beside her a young ass about a year old, and it was noticed that the latter willingly kept the mule company, and that at night he seemed to suck her. A closer observation was made, and the fact was recognised as perfectly authentic: the mule was giving milk, and cases of this kind are pretty numerous, but they are no proof of the fecundity of the mule—that is a different story. To prove that a mule has given birth, it is necessary to have observed the animal before parturition, and it is especially necessary to see it performing this operation. It does not appear to us that these conditions have been exactly fulfilled in the case which Mr. Nunn cites, and of which the following is an abstract:—

"On the 6th August last," says Mr. Nunn, "a mule belonging to a potter in the State of Kapurthula, in India, gave birth to a male foal." We are told nothing of the state of the mule before this event took place; we are not even told if it appeared to be in a state of gestation. It is said that it dropped a foal (before what witness we know not), and that on learning the news the prime minister, the Sirdar Rhagat Singh, ran up in a great hurry, at 6 a.m., to see the mule and its offspring. The whole city was in a state of excitement, the wise men of the country declaring that such a thing had never been seen before, and racking their brains for the presages to be drawn from the event. The minister gave his verdict—

on what basis and with what authority?—that the story was true to the letter; he sent for the veterinary staff, and they came and photographed the mother and child. The mother had all the appearance of a mule; the foal had more of the horse than of the mule about it. After all, there is nothing surprising about that; it must simply have had a stallion for its sire. These are the facts of the case, and, according to the sirdar, the state of the genital organs and of the teats of the mule leaves no room for doubting the authenticity of the fact; he is, for his part, quite certain that the mule did give birth to a foal. It is certainly possible, but it is really a pity that the veterinary surgeon was not called in sooner, and was not present at the operation. And, besides, it would be well to have data concerning the past of the phenomenal mule, and to know if, in the opinion of really competent judges, she was really what she was asserted to be—a mule.—*Revue Scientifique.*

POLYPUS OF THE VAGINA (FIBROLIPOMA) IN A MARE.

A SIX-YEAR old mare was presented at Professor Fröhner's clinique to be treated for an "excrescence" on the vagina. On the animal as it stood nothing abnormal was to be noticed, except a slight mucous discharge from the vagina, but on its being cast there was observed between the labia of the vulva a red tumour of the size of a man's fist, pear-shaped and with a smooth, gleaming surface; it was soft to the touch, but presented in its interior considerable resistance. It was neither hot nor painful. A pedicel of the thickness and length of one's finger attached it to the wall of the vagina. Professor Fröhner performed extirpation of this tumour on the animal as it lay, the pedicel being seized at its base by castrating pincers and cut through a little above a double ligature of silk thread, each loop of which held the half of the tissue to be cut. The operation was radical and without complications. Examination of the tumour showed that it comprised an adipose mass of the volume of a hen's egg surrounded by a fibrous shell formed by the vaginal mucous thickened and œdematous. The pedicel was traversed by several voluminous vessels some of them of the thickness of a pencil; Professor Fröhner therefore congratulated himself on not having operated with an *écraseur.*—*Monatsheft fur prakt Thierheilk.*

EXPERIMENTAL GLANDERS AND THE MALLEIN QUESTION.

To the two cases mentioned in the veterinary literature of positive transmission of glanders by cutaneous inoculation, of which the one was communicated by Csokor, the other by Penchu, Herr Prettner opposes a case in which an attempt to infect a ram was unsuccessful. In the Prague bacteriological institute Prettner inoculated, intraperitoneally, a ram with 20 c.cs. bouillon of glanders culture. After six days the guinea-pig inoculated as a check developed typical glanders. On killing the animal three months afterwards, by section of the cartoid artery for the purpose of getting serum, and at the subsequent *post-mortem*, no lesions were found which pointed to glanders; the cultures prepared from the organs also remained sterile. With the serum obtained two guinea-pigs, which had been injected with 2 c.cs. of glanders—bouillon—were inoculated for the establishment of the truth or the falsity of the antitoxic effect. Both animals, however, were within six days attacked with typical glanders and died. The result of these experiments is that the sheep in question was immune to glanders, and that the serum got from its blood could exercise no restraining effect on the development of glanders in the animals inoculated with it. This might also, perhaps, justify the assumption that cutaneous inoculation and intraperitoneal inoculation produce different results.

A ram attacked by strongylosis of the lungs was inoculated with mallein. It received 2 c.cs. of mallein (produced from bouillon cultures), injected into the interior surface of the femur. Its temperature then rose to 40·1 cent. The animal became very dull and would not touch any food; these morbid symptoms had disappeared by the next day, and the temperature had returned to the normal. After slaughter the customary lesions of vermicular pneumonia were discovered to only a slight degree. The experiment shows that, as has been observed in the horse, after an injection of mallein an increase of temperature is noticeable in other animals as well, in presence of other diseases than glanders.—*Deutsche Thierärzt. Wochensch.*

TREATMENT OF "MILK FEVER."

M. YMKER, who practises in a country where vitulary fever makes great ravages, resolved to try the treatment recommended by Schmidt, and carried it out as follows:—The

patient was milked dry, and afterwards the teats were washed with soapy water and disinfected with a solution of lysol. An aseptic milking-tube, having at its extremity an india-rubber tube about two mètres long and provided with a funnel, was afterwards introduced into the four teats successively. Things being thus arranged, seven to eight grammes of iodide of potassium were dissolved in a litre of freshly-boiled water, which was allowed to descend to 40° to 42° centigrade; each teat received a quarter of this solution. At the moment of injecting into the udder, it is important that the part under treatment should be suitably *massaged;* this has the effect of encouraging the penetration of the liquid, and of disseminating it in a sufficient manner over the lactiferous ducts. When the pulse was feeble, M. Ymker further made a subcutaneous injection of caffeine; at the same time he administered a fixed dose of aloes and salt-and-water enemas. Finding that the effects stated might be attributed to the other precautionary methods adopted, M. Ymker resolved to have recourse exclusively to the use of iodide of potassium, in order to form an exact opinion of the value of this product. With this end in view, he injected the solution already mentioned into the udder, making use of a pewter syringe, which he attached to the end of the india-rubber tube. The results obtained were marvellous; the five cows treated in this manner rapidly recovered, despite the fact that three of them had shown symptoms of extreme gravity. M. Ymker is of opinion that matters would not have taken this course if he had subjected his patients to a different treatment. He thinks that the theory which attributes "milk fever" to the development of toxalbumina in the udder, and especially in the colostrum, which contains 20 to 24%, must be considered as the only true one. Inferior organisms still unknown might be able to penetrate into the udder by the external canal and cause decomposition of the albumen at the temperature of the body. The iodide would then exercise a specific effect on these organisms analogous to the action which it is ascertained to have on the actinomyces. On the other hand, after a certain quantity of iodide has been absorbed, it may be legitimately admitted that it acts on the toxines already in the blood. This latter consideration might serve to explain the sudden disappearance of the grave symptoms due to the paralysis of the pneumo-gastric caused by the action of the toxines on this nerve. M. Ymker throws out the suggestion that a preventive effect might perhaps be obtained by the administration of a fixed dose of iodide by way of the mouth,

or by injecting it into the udder before calving takes place.—*Tydschrift voor veeartsenykunde en veeteelt.*

TREATMENT OF MILK FEVER BY MEANS OF IODIDE OF POTASSIUM.

In a case mentioned by M. de Vinck, iodide showed itself very active in the treatment of milk fever. M. de Vinck has made a modification in the method of operation which is likely to render injection easier and, above all, quicker. He uses four milking-tubes, each having an india-rubber tube attached. These four tubes end in one single piece, to which is attached another tube with a funnel at the end. The use of this instrument allows of simultaneous treatment of the four teats.—*Idem.*

TOXIC EFFECTS OF INJECTIONS OF MORPHINE ATROPINE.

As the result of observations and experiments made at Berlin, Herr Preusse has arrived at the conclusion that the addition of atropine to morphine, which is quite irrational from the physiological point of view, is not only superfluous, but even dangerous, endangering the existence of many horses; in short, he would advise no more injections of morphine atropine.—*Monatsheft für prakt. Thierheilkunde.*

TANNOFORM OR IODOFORM.

Professor Fröhner, in a work on the dressing of wounds, discusses the various agents to be employed when we wish a drawing together of the lips of a wound without suppuration. After examining the merits of iodoform, glutol, amyloform, and tannoform, he decides for the last-mentioned. He has used tannoform in his practice for six months, and says that he knows of no more efficacious nor cheaper siccative agent. He uses it in powder, without mixing, or well diluted with 5 to 10 times its weight of talc.—*Idem.*

CURE OF SWINE-FEVER BY MEANS OF INTRAVENOUS INJECTIONS OF SUBLIMATE.

After convincing himself completely by experiments that all the methods of cure hitherto prescribed were worthless, Marenghi had recourse to intravenous injections of sublimate.

A rabbit received intravenously 1 mg. of sublimate, and at the same time 1 cc. of a virulent culture of the swine-fever bacillus. As a check, one of two other rabbits received 1 mg. of sublimate intravenously, the third a culture of swine-fever bacteria. Of these three rabbits only the last died. Encouraged by this preliminary experiment, Marenghi tried the same treatment with swine. He made use of a sublimate solution of 1 gramme of sublimate, 3 grammes of common salt, and 1,000 grammes of water, which was injected by means of the Pravaz syringe. The needle of the syringe was snapped off twice at right angles, and joined to the syringe by a piece of indiarubber tubing. The quantity of sublimate injected consisted at first of 0·5 mg. per diem, and rose in the days following to 1 mg. For the purposes of injection Marenghi chose in large swine the vein on the exterior edge of the concha of the ear, in smaller swine the thoracic vein, which runs parallel with the teats, a finger's breadth distant from them, and has to be exposed by section of the skin. Marenghi treated 170 swine, and claims to have obtained a cure in every case within eight days. Intravenous injection is not equalled by any other method of procedure.—*Giornale della R. Societa Vet. Italiana*, quoted by *Deutsche Thier. Woch.*

SUCCESSFUL RESULT OF INOCULATION WITH PASTEUR ERYSIPELAS SERUM.

In the middle of July, 1898, swine were being daily attacked by erysipelas on the farm of Cummerow, near Malchin, and succumbed after only a few hours' illness. On the fifth day after the outbreak of the disease, at the special wish of the owner, I performed inoculation with Pasteur serum. On that very day there was lying in the farm a sow, which had already cast, severely attacked with the disease, having numerous livid spots on neck and belly, so much so that it was not in a condition to get up. The inoculation, which I performed on 178 animals, took place without any disastrous results whatever. Twelve days later, on making the second inoculation, I found the whole of the patients quite well again. The sow which was ill at the first inoculation was on this visit likewise perfectly restored to health. As swine had been daily succumbing on the farm to erysipelas, and as, from the day of the first inoculation not a single additional case was met with, even the animal which was attacked at the time having recovered completely, the matter is well worth noticing, and I can do

nothing but ascribe this good result to the adoption of the Pasteur method of inoculation.—Vet. Sur. Salchow, in the *Berliner Thierarztliche Wochenschrift.*

ACUTE EPILEPSY IN THE HORSE.

A HORSE, which its owner had had for about six months, but which had during this time shown no signs of disease, had, in the middle of May, to bring in a waggon-load of clover; but all at once stopped short, rolled its eyes, and bent its head between its forelegs in quite a striking and spasmodic manner. This fit lasted about a half to one minute; was repeated however, in exactly the same manner about twenty times, with pauses of about five minutes in between. During these pauses the patient lay quiet, began to eat grass hurriedly; also stood upright once or twice, but only to fall down, with its head invariably unsteady. After about two hours the animal was taken to its stable, where it stood up, ate well, but showed itself still very weak. In the course of a few days the horse was again perfectly normal. The fit has not, up to the present, recurred. The case in question was, therefore, one of acute epilepsy, and is noteworthy both on account of its long duration and also on account of the great number of quickly succeeding spasms.—*Deutsche Thierarztliche Wochenschrift.*

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

DECLARATION OF TRUST BY THE ROYAL COLLEGE OF VETERINARY SURGEONS.

DATED 25TH JANUARY, 1899.

THE ROYAL COLLEGE OF VETERINARY SURGEONS incorporated and regulated by a Charter and four Supplemental Charters, granted by Her Majesty in the years One thousand eight hundred and forty-four, One thousand eight hundred and seventy-six, One thousand eight hundred and seventy-nine, One thousand eight hundred and eighty-three, and One thousand eight hundred and ninety-two respectively. CONSIDERING that a fund has been raised through a Committee appointed in Edinburgh on the sixteenth day of January, one thousand eight hundred and ninety-six, with the object of commemorating the eminent services rendered to the Veterinary Profession by the now deceased Thomas Walley, Principal of the Royal (Dick) Veterinary College, who died in the year One thousand eight hundred and ninety-four, and that at a duly convened meeting of subscribers to said Fund, and of their Committee aforesaid, held in Edinburgh on the twenty-sixth day of January, One thousand eight hundred and ninety-eight, it was resolved that the

Memorial to be created by means of the Fund should take the form of a prize to be called "The WALLEY MEMORIAL PRIZE," to be awarded annually to the successful Competitor in an examination to be open to students who have completed three years of their curriculum at any British Veterinary College, and that with a view to the Fund amounting to the sum of THREE HUNDRED AND NINE POUNDS ONE SHILLING AND FOURPENCE,—being administered in perpetuity without the necessity of successive appointment of Trustees, it should be vested in the said ROYAL COLLEGE OF VETERINARY SURGEONS in perpetual trust, for the purpose of the income of the fund being applied as the prize aforesaid and subject to the conditions resolved upon at the said Meeting of the subscribers and their Committee: AND WHEREAS the said Royal College of Veterinary Surgeons has expressed its willingness to undertake said trust and discharge the duties arising out of it, and the said sum of THREE HUNDRED AND NINE POUNDS ONE SHILLING AND FOURPENCE has accordingly been paid over to the said Royal College of Veterinary Surgeons by John Robert Urquhart Dewar, Principal of the said Royal (Dick) Veterinary College, the Chairman, and Cornelius Cunningham, M.R.C.V.S., of Slateford, in the County of Midlothian, the Honorary Treasurer of the Committee of Subscribers aforesaid, on behalf of and as duly authorised by said Committee, and the said Royal College of Veterinary Surgeons has been requested and has agreed to grant these presents for the purpose of acknowledging the Trust aforesaid and declaring the purposes and conditions thereof: THEREFORE the said Royal College of Veterinary Surgeons HEREBY ACKNOWLEDGES that the said sum has been paid to it in trust and AGREES and UNDERTAKES that it will in all time coming hold said sum, and the investment or investments on which it may for the time stand (which sum and investment or investments aforesaid are hereinafter referred to as "THE WALLEY MEMORIAL FUND"), in trust for the use and purpose following, viz.:—That the free annual income arising from the Walley Memorial Fund shall be paid annually as a Prize, to be called "THE WALLEY MEMORIAL PRIZE," to be awarded in accordance with the conditions hereinafter mentioned, viz.:—(FIRST.) The WALLEY MEMORIAL PRIZE shall be awarded to such one of the Students specified in the next succeeding condition as shall obtain the highest marks at a special examination on the subjects hereinafter mentioned to be held for that purpose under regulations to be from time to time made by the said Royal College of Veterinary Surgeons:—(SECOND.) The examination aforesaid shall be open to the Students of any Veterinary College in the United Kingdom of Great Britain and Ireland, now existing or hereafter established and affiliated to the Royal College of Veterinary Surgeons for education in Veterinary Science, who shall have subsequent to the immediately preceding month of October passed the class "C" or third examination, under the present four years' course of the said Royal College of Veterinary Surgeons, or the examination which under any regulations which may hereafter be made by the said Royal College of Veterinary Surgeons shall correspond to said class "C" or third examination:—(THIRD.) The subjects of such examination shall be Pathology, Materia Medica and Hygiene; the examination shall be wholly a written one; and the time allowed for each of the three subjects of examination shall be not less than two hours:—(FOURTH.) The examination aforesaid shall be held simultaneously in London and Edinburgh, and also in Dublin, in the event of a Veterinary College being established in Ireland: AND the said Royal College of Veterinary Surgeons shall have power whenever they shall see fit to make any rules and regulations for the administration of the Walley Memorial Fund not inconsistent with the foregoing trust use and purpose: AND the said Royal College of Veterinary Surgeons

further AGREES and UNDERTAKES that the said sum of Three hundred and nine pounds one shilling and fourpence paid over as aforesaid shall, under deduction of the expenses of the trust be forthwith invested in the purchase of well-secured Feu duties or ground annuals in Scotland or in the purchase of freehold ground rents in England, or in the purchase of such other investments or upon such securities in or upon which gratuitous Trustees may invest Trust money by the Statute or Common Law either of England or of Scotland as may be selected by the said Royal College of Veterinary Surgeons, upon which Royal College of Veterinary Surgeons power so to invest said sum, and from time to time to vary the investment or investments representing the same, within the limits aforesaid as to said Royal College of Veterinary Surgeons may seem proper, is conferred by the Committee of Subscribers aforesaid in token of which the said John Robert Urquhart Dewar and Cornelius Cunningham subscribe these presents: AND it is hereby DECLARED by the said Royal College of Veterinary Surgeons and AGREED to by the said Committee, as evidence by the subscription of their Chairman and Honorary Treasurer aforesaid, that the said Royal College of Veterinary Surgeons shall not be responsible for loss upon any of the investments that may be made under the powers conferred by these presents provided the investments selected were reputed sufficient at the time of investments: IN WITNESS WHEREOF these presents dated the twenty-fifth day of January One thousand eight hundred and ninety-nine are sealed on behalf of the said Royal College of Veterinary Surgeons and subscribed by the said John Robert Urquhart Dewar and Cornelius Cunningham all as underwritten.

Sealed with the Common Seal of the Royal College of Veterinary Surgeons by the order of the Council, in the presence of

Seal RCVS.

A. W. MASON, *President,*

F. W. WRAGG, F. W. F. BARRETT } *Members of Council.*

Signed by the said JOHN ROBERT URQUHART DEWAR, and CORNELIUS CUNNINGHAM in the presence of

WILLIAM GALBRAITH,
Sixteen, Castle Street, Edinburgh,
Writer to the Signet.

A. J. CHRISTIE,
Sixteen, Castle Street, Edinburgh,
Law Clerk.

J. R. U. DEWAR,
C. CUNNINGHAM.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

AN ordinary general meeting was held on Thursday night, 2nd inst., at the Royal College of Veterinary Surgeons, 10, Red Lion Square, W.C. Mr. J. Sutcliffe Hurndall, the president, occupied the chair. There were present: Messrs. Butters, Rowe, Slocock, Singleton, Manton, Samson, MacCormack, Perryman, Savournin, Upton, Porch, Barrett, Walpole, Clapp, Wolsey, Reeke,

Simpson, Harrison, Nye, Hagmaier, Payne, Rogerson, Dowell, Carroll and Brown ; Professor Macqueen, Major Nunn, Colonel Rayment and Major Phillips. Visitors : Messrs. Coulson, Barrett and Smith.

The minutes of preceding ordinary meeting were taken as read.

Letters and telegrams of regret at inability to attend were read from Mr. W. E. Taylor, Mr. Flook, Mr. A. Prudames, and Mr. Wheatley, of Reading.

Elections and Nominations.

Veterinary-Lieutenant H. M. Durant, A.V.D. ; Veterinary-Captain F. B. Drage, Royal Horse Guards ; and Mr. Percy W. Smith were nominated for election as Fellows of the society.

The following gentlemen, nominated at the previous meeting, were unanimously elected Fellows of the society : Mr. E. L. Stroud and Veterinary-Lieutenant-Colonel G. J. R. Rayment.

Notice of Motion.

Mr. UPTON gave notice of motion *re* " Unqualified Castrators."

Specimen.

Mr. SAMSON (producing the intestines of a dog) said : This is a somewhat peculiar case, to me at any rate, I do not remember having come across a similar one before. It was a half-bred Yorkshire terrier, about four years old, and has been under my observation since a pup. It had distemper about six months ago, but from that time until just recently nothing ailed him. About three weeks ago I had notice that the dog was very unwell. When I first saw the animal he appeared indisposed, was off his appetite, and so on. His temperature was normal. After careful examination I could not find anything the matter with him. I gave him a little aperient medicine, but still the dog did not feed, and after about 14 days he died from exhaustion. During the interval between the time I saw him and his death he vomited considerably ; in fact, could keep nothing down. Once when examining him I pressed his left side and the animal shrieked—I felt the place again and there appeared to be a swelling of some sort, but what it was I could not determine. I could not tell whether it was inside or outside the intestines. In the meantime the animal was brought to my place, and died during the night. A *post-mortem* was made, and from superficial observation I should certainly think it was suffering from tuberculosis. The intestines were all drawn up, and the mesentery strung together. The liver was studded with deposits, and it was apparently a case of tuberculosis. Unless the affected parts were carefully examined under a microscope the exact pathology may be debateable.

The specimen was then passed round for inspection.

" OPERATION WOUNDS AND METHODS OF TREATMENT."

Discussion on Mr. Flook's Paper.

The CHAIRMAN, after announcing that Mr. Flook was again unable to be present, owing to being unavoidably detained, called upon Mr. Porch to open the discussion.

Mr. PORCH : I think that all veterinary surgeons will admit that antiseptic treatment is the proper treatment for wounds, however we may differ as to the proper method of treating pneumoina, azoturia, laminitis, etc. It is undoubtedly the best way, unless you can insure the wounds being kept clean and well dressed, and to have them open so that you can see them. I have never had a wound heal by first intention, which I understand to mean that

when you bind up a wound the divided muscle or skin unites at once, or almost at once. I have never been able to get that to come about—there as always been a certain amount of discharge. It is some time before the divided portions will throw out granulations and unite. It is very difficult to get our patients into that state where you can assure asepsis being carried out. With medical men it is very different, as they have every appliance at hand, and can put their patients into a place with sheets over the door. I have seen surgeons operating on a fractured patella, where they have everything to hand, with three or four people waiting on them with instruments, using carbolic spray, etc. A veterinary surgeon when operating has not these facilities, but has to do the best he can in the circumstances. I think precautions should be used when operating. The operator should not work with his hands or instruments dirty, whether it be neurectomy, castration or any other operation he is going to perform, and he should keep his instruments in some antiseptic solution. Mr. Flook objected to sponges. So do I. I think there is no more ready vehicle for carrying septic matter into wounds. A man, perhaps, has to dress the wounds of several patients; he goes from one to the other using the same sponge, and probably disease is carried with the sponge. I now use tow in preference to a sponge, as after dressing the wound you can burn it. Moreover, sponges are very difficult to clean and render aseptic. Mr. Flook mentioned that he did not use chemical astringents. Neither do I. I think nothing retards recovery so much. If you use perchloride of iron, for instance, it takes perhaps three times as long for the wound to heal. If I wish to arrest hæmorrhage I use pressure. Of course there are many antiseptics which you might use. I formerly used carbolic acid, but have now discarded it. I frequently use perchloride of mercury; I get it in tablets and dissolve it in water, 1 to 1000. An antiseptic which Mr. Flook did not mention, and which I have used extensively, is chinosol, which is similar, I think, in chemical form to iodoform. It has proved a great success, and is certainly one of the best dressings I have had. It is always difficult to render the part on which we are going to operate aseptic, and whatever care you take in this respect it is impossible to render all the parts of the bed upon which the animal may be cast aseptic. Mr. Flook mentioned biniodide of mercury as a dressing. I have never tried it as an antiseptic, although I have done so as a counter-irritant. I intend to try it as an antiseptic, and see whether it is better than perchloride of mercury. Lord Lister's double cyanide of mercury and zinc I have not tried. I think it behoves every veterinary surgeon to use the greatest possible care in operating. It is quite clear to my mind that this antiseptic treatment is the only proper one to adopt. In conclusion, I should like to thank Mr. Flook for bringing this matter before us.

Mr. UPTON: I think in the treatment of wounds, the great thing is to get a free opening. Of course different treatment is given effect to by town or country practitioners. By the latter oil and turpentine is still frequently used for the healing of wounds. When a wound is inflicted, hæmorrhage ensues, and you will find the wound get coated over with a thick coagulum. Wounds heal by granulation and suppuration. Whether treatment of wounds by means of oil prevents micro-organisms from entering the wounds I would not like to say, but I don't think anything answers much better. In operating upon parts in connection with the faschia of the muscle of the shoulder, I have seen some very bad results. Sometimes you get a shaft run into the shoulder of a horse, and the place swells up considerably owing to the air passing through the connective tissue. As regards the treatment of dogs, I never put anything poisonous on them, as it is a dog's nature to lick itself. One of the best things to use is boracic acid and weak solution of permanganate of potash.

Professor MACQUEEN: With regard to Mr. Upton's remarks, I should not like to teach young students that when a wound heals you should have suppuration. As a matter of fact, it is just the reverse. Occasionally wounds heal by granulation. Then with regard to the animal which died suddenly, and from which a sebaceous cyst had been removed, what really happened in Mr. Upton's case is that the wound was infected at the time he opened it, and the animal died, not from the cause he attributes, but from septic infection.

Mr. SINGLETON: The advantages to be derived from Mr. Flook's practical paper appears to be, firstly, the importance of using antiseptics, and, secondly, the choice of the antiseptics to be employed. Mr. Flook mentions several, and gives the preference to carbolic acid and biniodide of mercury; he also mentions Lister's double cyanide gauze as an antiseptic dressing for wounds. I can speak most highly of this gauze, having myself used it ever since it first came into the market. Moistened with 2½ per cent. carbolic acid lotion, you can have nothing better; it forms an effective barrier to the entrance of micro-organisms into wounds. Mr. Flook mentions the use of sponges in surgical operations, and he gives details for their preparation, but, if I am not mistaken he omits to mention boiling. Contrary to Mr. Porch's experience, I like to use sponges in operations, and greatly prefer them to tow; but they must be properly prepared, and boiling them is about the very best way to fit them for use. After procuring new sponges from the chemist's shop, you soak them in ordinary tap-water for about three hours, changing the water several times; then squeeze them in carbolic lotion, and then boil them for twenty minutes, when they are fit for use. Sponges are slightly diminished in size by boiling, but this is of no consequence. The paper next refers to the micro-organisms with which the veterinary surgeon has to deal in his treatment of wounds, and mentions the streptococci and staphylococci which are associated with the suppurative process, which, instead of being favourable to the healing process, is positively detrimental to it These organisms are ubiquitous—found in air, earth and water—pus-producing, peptonising microbes, but, fortunately for us, sporeless, spore-formation being unknown in the micrococci. Pus is a fluid which does not coagulate, although the principal cellular elements it contains are white blood corpuscles, and this raises an important point in physiological chemistry which appears to confirm the observations of the late Dr. Wooldridge, who, when working at blood, considered that coagulation was due, not to the white blood corpuscles, as was always held, but to the plasma—in fact, that the plasma contained all the fibrin factors. I think the thanks of this society are due to Mr. Flook for his paper.

Mr. SAMPSON: I quite agree with Professor Macqueen. My experience is that an animal never died from the cause mentioned by Mr. Upton alone. I have seen bullocks with bad punctured wounds, and considerable swelling on account of same, but nothing serious arose. I agree with Mr. Porch that veterinary surgeons are not always in a position to apply the measures suggested by Mr. Flook in his paper, but that we have to make the best of our circumstances. As to wounds healing by first intention, I do not think I have ever had one do so in my life. I think sponges a nuisance. Of course, it would be all right if you could use a separate sponge for every operation, but the public won't pay for that. Cotton-waste is quite as useful as tow, and has the advantage of being cheaper.

On the motion of Mr. DOWELL, a hearty vote of thanks was accorded Mr. Flook for his excellent paper.

The Sale of Horses Considered from a Legal Standpoint.

BY W. F. BARRETT, M.R.C.V.S., BARRISTER-AT-LAW.

Mr. President and Gentlemen,—I am afraid the subject which I have chosen to address you upon this evening, viz., "The Sale of Horses Considered from a Legal Standpoint," is not one which is likely to interest you as greatly as I could desire, inasmuch as you are engaged almost entirely in the relief of pain and suffering in the lower animals, and are necessarily, therefore, more desirous of listening to pathological discussions than to questions of a legal nature; and yet I presume to express the faint hope that there are questions at law in regard to the sale of horses which, if understood, may be of occasional service to you, and enable you when your clients are in difficulty to render such advice as will be highly appreciated by them, and which will, at any rate, augment the confidence which they are, in an increasing manner, disposed to repose in you. I assure you the law of sales generally is not easily comprehended, and therefore let me at once say that my paper does not pretend to be a complete exposition of the law on this subject; indeed, I should require to address you many times, and should weary you beyond measure in the attempt. I wish, preferably in language free from technicalities, to give you a few practical hints for your guidance without burdening you with judicial or statutory details.

Let us assume, for the purpose of my address, that a horse dispute has arisen, and that you have been consulted in your professional capacity on the question of soundness. Often, especially in the country, your client appeals to you for further assistance. He is likely to submit to you one or more of the following questions:—

(*a*) Have I really bought the horse, or is he still on trial and can I return him?
(*b*) Was he sold with a warranty?
(*c*) Was the warranty true or false?
(*d*) Has the period of warranty expired?
(*e*) Has he answered the terms of the warranty?
(*f*) If the owner refuses to take him back what course should I pursue?

These are the chief points I wish briefly to elucidate this evening.

Have I really bought the horse, or is he still on trial and can I return him?

The first point you have to determine is—Has there been an absolute or merely a conditional sale? If an absolute one you cannot return the animal, your remedy is an action for damages; if a conditional one you may return in pursuance of those conditions, but not in contravention of them. I shall only trouble you with one definition of sale, and that is from the pen of Blackstone. He says a sale is a "transmutation of property from one man to another in consideration of some price," that is to say, the property must change hands, not only in respect to possession, but in regard to ownership as well. If a man lend you a horse the possession is in you, but the ownership is in the lender, and hence there is no sale. A conditional sale is one to which certain conditions are attached.

I hope I shall not weary you if I ask you to carefully follow me through one section of a most important enactment, viz., the Statute of Frauds, passed in the 29th year of the reign of Charles II., which is still in force, and now embodied in the 4th section of the Sale of Goods Act, 1893, and which largely governs the law on the sale of property.

The 17th section alone practically concerns us to-night, and briefly it is this: "No contract for the sale of goods of the value of £10 and upwards shall be good unless the buyer accept and receive part of the goods so sold, or give something by way of earnest or part payment, or some note or memorandum in writing." Therefore, in the absence of any stipulation as to time, if the buyer has accepted and received the horse there is a sale, if he has partly paid for it there is a sale, if he has not accepted nor paid for it, nor given a note of purchase signed by himself, then if the value is £10 and over there is no sale, and you can advise your client accordingly. If the horse is of less value than £10 the contract may be a verbal one, for remember the Statute of Frauds only applies to sales of the value of £10 and upwards. Forbear with me if I give you an illustration in case you have not followed me, for it is not easy. A says to B I will give you £20 for your horse; B replies Very well, I accept your offer, and will send him to your house to-morrow. A, before or at time of delivery, may repudiate the bargain by letter or telegram, may refuse to accept the horse if delivered, for the Statute of Frauds says there is no sale. In this case B cannot sue A. If the price were £9 19s. 11d. instead of £20, and if B had a witness to the conversation, A would have to pay. B would require a witness, otherwise there would be oath against oath, in which case I am afraid the horse dealer would not have credence attached to his story. The next question is:—

Was He Sold with a Warranty?

In order that this point may be clear it is necessary you should understand what a warranty is, and distinguish between warranty and representation. I feel I must trouble you with a definition of each. Warranty may be defined to be *an unconditional undertaking that a horse or any article really is what the warrantor professes it to be*, whereas a representation *is a statement or assertion made by one party to the other before or at the time of the sale of some matter or circumstance relating to it.* It is very important you should clearly appreciate the difference, because if there is a breach of warranty the buyer has certain remedies at law, he may at his discretion return the horse or sue for damages, whereas in the case of a representation not amounting to an actual warranty, he has no redress but must accept and pay for the horse, even though such representation is false, unless he can clearly show that it was fraudulently made with the intention of deceiving, which is often a very difficult matter indeed.

You may usually determine the difference in this way. If the seller assert as a *fact* that a horse is a certain age or has been trained to particular work, that is a warranty; if he merely gives an opinion or judgment upon a matter of which the seller has no special knowledge, and on which the buyer may also be expected to have an opinion and to exercise his judgment, that is a representation. I will give you two illustrations: A sells a horse to B for £30, and says I sell my horse as six years old and as having been regularly hunted. Here undoubtedly there is a special warranty as to age and qualification, but if the seller says I *think* he is six years old, and I understand he has been regularly hunted with the Leicester hounds, it is a mere representation not amounting to a warranty, for in this latter case A is merely expressing an opinion, not asserting a fact. Under such a sale the buyer must rely upon his own judgment, or consult his veterinary adviser, and should a mistake be made by either of them the buyer must suffer the consequences. Perhaps in this connection I ought very briefly to touch upon the maxim *Caveat emptor.*

You know in all sales the buyer, unless relying upon the warranty of the vendor, and hence not making an examination on his own behalf, is justified, and, indeed, required, to use ordinary care and diligence in the matter of

purchase, for, in the absence of such care, the law holds him not to be entitled to relief. If, therefore, an intending purchaser examines for himself a horse which is warranted sound, and buys an animal with one ear only, or without a tail, and had failed to observe the defect, he cannot escape his bargain, but must suffer for the consequences of his own acts, and hence one may profitably assert a well-known legal rule that *a warranty does not extend to apparent defects.* In the absence, then, of an assertion of a fact verbally or in writing, there is no warranty, and the seller has no remedy for any loss he may have sustained.

A case of this kind often arises. A person attends a repository the day before the sale, with a view of examining any horse that he deems may suit him, and, during the progress of the examination, is accosted by the seller, who says, "I assure you he is perfectly sound, and you have nothing to look for or be afraid of." In these cases it has been held that no private warranty was given, and that the conditions of purchase are those contained in the catalogue of sale ; in other words, the representations of the seller are deemed not to have altered or in any way varied the written conditions, for the purchase has been affected at the hammer, and is subject to the regulations and conditions applying at the instant of sale.

It is almost unnecessary to remind you that if your advice is sought as to the nature of the warranty to be obtained before sale, you will advise that, if possible, the same be reduced into writing, and, further, you may be interested to know that a warranty subsequent to sale is bad, for there is no fresh consideration to support the subsequent promise, and all obligations must be attended with a valuable consideration.

Was the Warranty True or False?

In this connection it is essential you should carefully consider the scope and purport of the warranty. Many warranties are in their nature limited, whilst others are comprehensive, in which latter case the warrantor gives an undertaking that the horse is free from any defect which is ordinarily regarded as an unsoundness. The terms of the warranty, therefore, should be carefully read and comprehended, otherwise the adviser will fall into errors and mislead his client. In the case of a limited warranty, defects which are not comprised therein cannot be set up in breach of a warranty, and hence an animal warranted in wind and eyes may be lame, or present other defects which the buyer cannot rely upon ; again, many horses are warranted free from lameness by fraudulent dealers, who well know that the animals are suffering from organic maladies. This question opens up the important question of fraud, inasmuch as any contract may be set aside on the ground of fraud. You will remember that in the earlier part of my paper I asked you carefully to note the difference between representation and warranty, and in dealing with fraud I have to ask you to perceive the difference between misrepresentation and fraud. Fraud may de defined as "a mis-statement made knowingly, with intent to deceive," whereas a misrepresentation may be innocent or fraudulent, according as the assertor is ignorant or aware of his false statement. If the mis-statement has been knowingly uttered, with the view of effecting a sale, the horse may be returned, and the buyer will be entitled to recover any loss he may have sustained ; whereas if the seller acted innocently, then, however much the buyer may have been misled, he has no remedy.

It is to be borne in mind, however, that persons who misrepresent horses mostly do so knowingly, and the court will lean to this view of the case, especially if the warranty has proceeded from a horse dealer, who by reason of his occupation will be deemed to be conversant with the ordinary equine

defects. It has recently been decided that if A send a horse to a repository and advertise it as his own, whereas in fact it belongs to B, then the buyer has right of action against A by reason of his misrepresentation, or may rescind the contract at his election.

I dispose of this question now by remarking that if the warranty be true, under no circumstances can the horse be returned; if it be false ask yourself before advising whether the seller knew it was so; if he did, then there is a breach of warranty, if he did not your client must suffer the loss.

Has the period of Warranty expired?

In dealing with this question you must remember that sales of horses are effected in many ways, and it is not infrequent that horses are sold with warranties varying greatly in point of time.

We may first of all consider those sales that are conducted at our well-known London horse repositories. I do not purpose reading those conditions of sale to you, because many of you are just as familiar with them as I am. What I wish to point out is that there is invariably a time limit, within which the animal must be returned if he is deemed not to comply with the warranty, and the returns must be accompanied with a veterinary surgeon's certificate. There are cases, however, in which it may be impossible to return the animal, he may be taken seriously ill on being removed from the repository, or in consequence of severe work may fall suddenly lame. What is the duty of the purchaser under these circumstances? Judicial decisions are almost silent on this branch of the law. Clearly it would be incumbent on the buyer to take some steps before the period of warranty had expired, and I think it would be his duty to inform the auctioneer of the condition of the animal, of his inability to return the horse, or submit him to the proper test; notifying further that he had called in veterinary aid, and claiming that the waraanty at any rate had not been fulfilled. The seller in this case would be in an awkward position, and I do not see how he could succeed unless he were able to show that such resulting illness or lameness were due to improper treatment. Considering how common these cases are, one is surprised to find how few cases are contested; it, no doubt affords splendid evidence of the wisdom with which many disputes are arranged; for although lawyers prefer to fight it is sometimes lamentable to witness the results which follow legal proceedings. It will be a good thing all round when our legal methods are still further improved, and when cases can be fought out quickly and cheaply.

The observations which I have made in regard to horse repository sales also apply to private warranties where there is a time limit, and in these cases also the animal must be returned before the expiration of the period fixed. There are cases in which a warranty is given without any mention as to time. Here the buyer would be justified in returning the animal within a reasonable time of the discovery of the unsoundness, provided, of course, he were in a position to show that the unsoundness existed at the time of sale. The longer the period that is allowed to elapse the greater the difficulty would become, and hence the horse buyer should at the earliest opportunity seek the aid of his veterinary surgeon, in order that any doubtful point may be set at rest. In cases where after discovery of unsoundness the owners have neglected to notify the same or return the animal the Courts have refused to give relief, owing to the tactics of the purchaser.

I especially wish to draw your attention to an important decision which was given in the High Court in 1865; it is still good law, not having, as far as I know, been upset. It was the case of Chapman *v.* Gyther; the seller of the horse signed the following warranty:—

"June 5th, 1865, Mr. C. bought of G. G. a bay horse for £90, warranted sound." Warranted sound for one month.—G. G.

The nice point arose whether this was a warranty of soundness at the time of sale, and a further warranty for one month. The Court of Queen's Bench held that the latter words limited the duration of the warranty, and meant that the warranty was to continue for one month only, and that the complaint of unsoundness must therefore be made by the purchaser within one month of the sale. The buyer was, therefore, the loser by the insertion of the qualifying words, as otherwise complaint might have been made within a reasonable time of the discovery of the defect. Qualifying words, therefore, succeeding general words are deemed to limit them, and place upon the purchaser the obligation of returning the horse within the qualifying period. I wish to repeat before leaving this branch of the subject that a warranty given subsequent to purchase is bad. It is a device which is often practised by shady horse dealers in the expectation and hope that the anxious client will be satisfied, whereas he is in no way benefited, indeed it may be said that he is in a worse position, as he is often induced to sue upon the useless warranty, only to discover, when it is too late, that he has been mulcted in heavy law costs, besides suffering the chagrin of defeat.

Has he answered the terms of the Warranty?

With regard to this question, it is one of importance to yourselves, inasmuch as you are essentially called upon to decide the point in so far as the professional aspect is concerned. I am not going to inflict upon you a lengthy lecture as to what is, or is not, unsoundness. That is not comprised within my subject; you are as familiar with this branch of the law as I am, and hence I propose merely treating of the word "sound."

Baron Parke, one of our most eminent deceased judges, said, "I have always considered that a man who buys a horse, warranted sound, must be taken as buying him for immediate use, and has a right to expect one capable of that use, and of immediately being put to any fair work the owner chooses. The rule as to unsoundness is, that if at the time of the sale the horse has any disease which either does diminish the natural usefulness of the animal, so as to make him less capable of work of any description, or which in its ordinary progress will diminish the natural usefulness of the animal, or if the horse has, either from disease or accident, undergone any alteration of structure, that either does actually at the time, or in its ordinary effects will, diminish the natural usefulness of the horse, such horse is unsound."

The effect of this is that any defect existing at the time of sale, and subsequently interfering with his ordinary powers of work constitutes an unsoundness. A cough present at the time of purchase may develop into pneumonia, or a splint may favour the onset of subsequent ostitis; these, under such circumstances, would afford a good ground of action for breach of warranty, in the event of a warranty having been given. Coleridge, J., in a case left it to the jury to say whether the animal had upon him a disease calculated *permanently* to render him unfit for use, but this direction has been much questioned, and in one case has been overruled.

It is sufficient if the defect, even temporarily, renders the horse unfit for use; it is going too far to say that it must be permanent.

Mere badness of shape, which really produces unsoundness, is not unsoundness if the disease did not exist at the time of sale. Congenital defect, on the other hand, is an unsoundness if the horse is thereby rendered less than reasonably fit for present use. The plaintiff in one case was held entitled to recover, in which the horse from undue convexity of the cornea was addicted to shying.

I might mention here that the servant of a horse-dealer is impliedly authorised to warrant a horse, whereas the servant or a person who is not engaged in buying and selling horses, has no such authority, and cannot do so unless specially authorised by his master.

If the owner refuses to take the horse back, assuming, of course, that the warranty fails, what remedies are open to the buyer?

The buyer must first notify to the seller that the horse is unsound, and that he is about to return him, and let me add that this should always be done immediately the unsoundness is discovered. He may then proceed to return the animal. If the vendor refuses to accept, the better plan is to cause the horse to be sold at a suitable repository, taking care to inform the vendor of your decision, and have the sale reasonably announced. The purchaser has then a right of action for the difference between the buying and selling price, together with cost of sale and other reasonable expenses that he may have been put to. Or the purchaser may elect to place the horse at livery, notifying the owner, and sue for the price paid. This course is not generally to be recommended, because if the buyer should fail to establish his case he will have to pay all livery and other expenses. If the difference in dispute is not above £50 the action must be commenced in the County Court, and may be the same court by consent of both parties in writing if the amount does not exceed £100. In all other cases the action must be commenced in the Queen's Bench Division of the High Court.

Gentlemen, I desire to thank you for the patience with which you have listened to this dry address. I have endeavoured to make it as interesting as possible. It is not easy, however, to clothe legal doctrines in pleasant language. I am afraid a motive not altogether unselfish prompted me in the choice of my subject. I refer, of course, to my desire to master this branch of law. I trust, however, I may have conveyed some little useful information to you, and that you will endeavour to raise a discussion on my paper. Has not the time come when you may with advantage know something of the rudiments of horse law, and be able in times of doubt and difficulty to offer some advice which will on the spur of the moment, at any rate, aid your client and increase his confidence in you.

Discussion.

The CHAIRMAN: We have all listened with great interest to Mr. Barrett's paper, and far from thinking it dry must congratulate ourselves on having a member of this Society who can bring a subject of this character before us in such a clear and interesting manner.

Major NUNN: As a fellow member of the legal profession I must congratulate Mr. Barrett for putting an exceedingly technical subject in such acceptable language. There are one or two things I should like to say. The first is, and it seems somewhat of a paradox, that there is really no law regarding the sale of horses. Horses are not like human beings. The latter have both rights and liabilities attached to them. Everyone has a right to liberty, but no one has liberty to inflict a wound upon another. But horses are different. The sale of horses is looked upon like the sale of merchandise — a truss of straw, or a pound of tea. As far as I know there are only two special statutes relating to the sale of horses, and they are very old ones; both refer to the sale of goods in a public place. Mr. Barrett mentioned about the return of a horse because it did not comply with the conditions of sale, and that it must be returned if unsound, and be accompanied by a veterinary surgeon's certificate. There was a case the other day in court. The horse did not comply with the conditions of sale, and was returned within the stated

time, but the veterinary certificate was sent by post, and did not arrive until the morning of the following day, and it was held that the purchaser consequently had no claim on the dealer, and must keep to his bargain. There is an idea that if a dealer gives you the "refusal" of a horse, as it is called, it is binding upon him, but this is not so. A case of this kind—but not with regard to a horse—was decided the other day. The defendant gave the plaintiff a memo. in writing—"I hereby agree to sell to Mr. George —— the whole dwelling-house, etc., for the sum of £—. As witness my hand this tenth day of ——. This offer to be left open until Tuesday next.

The defendant, in the meantime, sold the horse—presumably getting a better offer—and it was held that he was quite within his rights, as no consideration had been given by the plaintiff.

Mr. SAMSON: I must thank Mr. Barrett for his admirable paper. I should like to ask him what "soundness" is. When a horse is warranted "sound," what does it mean? I take it that soundness means "perfect in every respect." With regard to the sale of horses, I take it you buy it on the representation made. The dealer says it has a splint, and warrants the horse to you for six months, and you buy it on that condition. I think the best thing to do is to get a warranty in writing.

Mr. ROGERSON: I am much obliged to Mr. Barrett for his practical paper, which has a good deal of matter in it, and will give plenty of scope for discussion. I should like to question him with regard to advertising horses in *The Field*, or similar papers. Do the conditions usual to auction sales apply in such cases? I came across a case in the country last summer. A friend of mine inserted the following advertisement in *The Field*:—A brown gelding, five years old, a fine mover, quiet to drive and ride, price 80 guineas. In a few days she got a letter from a gentleman who had noticed the advertisement and would like to see the horse. The gentleman subsequently came over, saw the animal, had it trotted, driven, etc., and then offered £50 for it, which the lady would not accept. Shortly afterwards he wrote offering £60—the lady consulted me and I advised her to accept. Accordingly the bargain was struck. The arrangement was that the lady should deliver the horse at a place about ten miles distant, where the gentleman would meet her groom and hand over the cheque. This was done, and after trotting the horse up and down the market place, the gentleman handed over the cheque. The next day he had the horse examined by a veterinary surgeon, who condemned it for unsoundness. The gentleman thereupon wrote informing the lady and stating that if she would take the animal back he would forfeit £10. This she would not agree to and wired to him to that effect, and received a telegram in reply, "Horse on the way back to you." She gave orders for the stable door to be locked, but someone going in forgot to fasten the door after him, and when the man arrived with the horse, finding the door of the stable open, he promptly put the animal in. It ended in the lady retaining the horse, and the £10, which was duly forwarded. My object in mentioning this is to ask Mr. Barrett whether the conditions which apply to public auctions would not also apply in the case of horses sold through the medium of *The Field* or *Horse and Hound*.

Mr. SLOCOCK: I have listened with much interest to Mr. Barrett's paper. As regards the sale of horses at auctions, I have never been told that if an auctioneer knock down a horse to the highest bidder it is on sale except the highest bidder accepts the animal. If you bid fifty guineas and the auctioneer knocks down the horse to you, you may refuse it. I was told this by an auctioneer. The other day I was at the Agricultural Hall, and had a commission to buy a cheap stallion. A horse came out which I had looked over, but the price, I was afraid, would be beyond me. I was keeping my eye on him, however. I happened to be at the other end of the yard at the

time. I heard the auctioneer say what I thought was £44, so I put up my stick, but found it was £144. Of course, I declined to take the horse, but the auctioneer said it was my bid, and I must take the horse. During the day I bought another horse, and paid for same, but not for the first one. Nothing further has been done in the matter, so far.

With regard to warranty, I once sold a good pony which I could not keep sound. She was quiet to ride and drive, and I sold her as such. To my disgust, the auctioneer said, "I sell her as sound," although she was lame at the time. One of my own friends bought her. He took her out, put her in harness, and of course found her lame. I had to explain that the auctioneer had gone beyond his instructions. With regard to horses not fulfilling conditions of sale, but which are too ill to be returned within the stipulated time, I think there is a clause in the auctioneer's conditions to the effect that if the horse is incapable of being returned, a certificate from a veterinary surgeon will be accepted.

The CHAIRMAN: It has to be confirmed by the repository's veterinary surgeon.

Mr. SLOCOCK (continuing): As regards soundness, I take it that a warranty means that a horse is free from disease likely to interfere with his utility for the purpose for which he is required.

The CHAIRMAN: I must call your attention tothe fact that the hour at which we usually adjourn has now arrived. Should you wish to continue the meeting, however, it is quite open for you to do so. I take the feeling of the meeting on the subject.

On the motion of Professor MACQUEEN, seconded by Major Phillips, the further discussion of Mr. Barrett's paper was adjourned until the next meeting.

The CHAIRMAN: It is with much regret that I have to announce the death (since our last meeting) of Mr. McOnie, who was a Fellow of this Society for some years.

Mr. PORCH: I beg to propose that a letter of condolence with his relatives be sent from this society. Mr. McOnie was known to me personally, and I am grieved to hear of his death.

Seconded by Mr. ROGERSON, and carried unanimously.

This terminated the proceedings.

YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

THE annual meeting and dinner took place at the Queen's Hotel, Leeds, on Friday, January 27th, the proceedings proving very successful, though the attendance was not quite so large as in some previous years. At the meeting Mr. T. Fletcher, of Hilsborough, Sheffield (the new President), was in the chair, and the members present included Messrs. A. W. Mason (president of the Royal College of Veterinary Surgeons), W. F. Greenhalgh, Leeds (the retiring president of the Yorkshire Association), J. Abson, Sheffield; J. Atcherley, Harrogate; G. W. Carter, Keighley; J. Clarkson, Garforth; J. Cooke, Scarboro'; P. Deighton, Selby; F. Hallilay, Dewsbury; J. McArthur, Doncaster; M. Robinson, Barnsley; H. Snarry, York; Waller, Brighouse; J. E. Scriven, Tadcaster (hon. treasurer); H. G. Bowes, S. Wharam, and Mr. A. McCarmick (hon. sec.), Leeds. Among the visitors were Messrs. J. McKinna, Huddersfield (president of the Lancashire Association); R. Cockburn, Eastwood, Notts; Stephen Parkinson, H. E. Hamilton, W. Atkinson, Leeds; and J. Godfrey Long.

The HON. SECRETARY intimated that letters of regret at inability to be present had been received from Mr. Locke, Manchester; Prof. Williams,

Edinburgh; Prof. Pritchard, Prof. M'Fadyean, London; Vet.-Capt. Nuttall, Mr. Frank Somers, Leeds; Messrs. J. S. Carter, Bradford; A. Gentle, Otley; T. Pratt, Ripon; and Pollard, Wakefield. Mr. Pratt, in his letter, stated that, after reading the kind expressions at the October meeting, he had come to the conclusion to continue his membership of the Association, an intimation which afforded the greatest satisfaction to the gathering.

New Members.

On the motion of Mr. CLARKSON, and seconded by Mr. WHARAM, Mr. Hollings, of Methley, was elected a member.

The election of W. G. Schofield, of Pontefract, was also agreed to, the resolution having been submitted by Mr. GREENHALGH.

A brief discussion took place as to the transference of a balance of £12 4s. 9d. in connection with the fund raised last year for the entertainment of the National Association on the occasion of their visit to Leeds, and it was decided to set out the subject in the agenda for the next meeting.

The Leeds Corporation Bill.

Veterinary Surgeons and the Inspection of Cowsheds.

Mr. GREENHALGH initiated a very important and interesting discussion by calling attention to the sanitary provisions of the Improvement Bill which the Leeds Corporation are promoting in the approaching session of Parliament. The particular clauses were as follows:—

The Medical Officer of Health, or any person acting under his orders, provided with, and if required exhibiting, the authority in writing of such medical officer, may from time to time within reasonable hours enter any byre, cowshed or dairy farm within the city or wherever situated, if the milk produced therein or supplied therefrom is being sent for sale within the city, and may inspect, examine, and apply the tuberculin test, or other reasonable test, to any cow kept therein for the supply of milk, in order to determine whether such cow suffers from any disease which might render the use of the said milk dangerous or injurious to health.

Every owner of any cow kept within the city for the supply of milk, or wherever kept, if the milk is being sent for sale within the city, and every person in charge of the same shall render such reasonable assistance to the medical officer, or other person provided with, and if required exhibiting the authority in writing of such medical officer, for the purpose of inspection, examination, and test as may be required by them, and any person refusing such assistance or obstructing the inspection, examination or test, shall be liable to a penalty not exceeding £5.

Every dairyman, or keeper of a byre, cowshed, or dairy farm, whose milk is sold within the city, who, after intimation has been made to him by the medical officer of health, or other duly authorised officers of the corporation, that any cow in his possession kept for the supply of milk for human consumption is suffering from tuberculosis, or any disease which might render the use of such milk for human consumption dangerous or injurious to health, shall retain such cow in his possession shall, unless the contrary be proved, be presumed to have sold the milk produced by such cow for human consumptiou, and shall be liable to a penalty not exceeding £5.

Every person, whether within or beyond the city, who sells or suffers to be sold, or used for human consumption within the city the milk of any cow which is suffering from tuberculosis or any disease which might render the use of such milk dangerous or injurious to health, shall be liable to a penalty not exceeding £10 for each offence.

Penalties imposed by this Act, or part of this Act shall be recoverable on the informa-information or complaint of the medical officer of health, or other duly authorised officer of the corporation, in the court of summary jurisdiction of the city, or, where the offence has relation to a byre, cowshed, or dairy farm outside the city, in the court of summary jurisdiction having jurisdiction in the place where such byre, cowshed, or dairy farm is situate.

It would be seen from the provisions, said Mr. GREENHALGH, that the medical officer of health would have the power to determine who should

make the inspection and apply the tuberculin or any other reasonable test. The veterinary profession were totally ignored, and he was very sorry to say that this was not the first occasion on which the medical officer of health for Leeds (Dr. Cameron), had ignored them. He (Mr. Greenhalgh), insisted that the veterinary surgeon ought to be recognised in these matters. It was, he need hardly point out, more likely that a professional man would detect the disease than a layman. According to the clauses, the medical officer of health could send anybody he chose, even a scavenger out of the street, to apply the tests. If the proposal of the Leeds Corporation became a precedent, the principle must become universal. He understood that the local milk dealers intended to take some action so far as the Bill affected their interests, and he urged that the Yorkshire Veterinary Medical Association should also make a strong representation to the Parliamentary Committee of the Leeds Corporation to prevent any injustice being done to them as a professional body.

Mr. A. W. MASON said the council of the Royal College of Veterinary Surgeons had had their attention called to this particular matter, it being mentioned that 30 corporate bodies were trying to obtain through Parliament similar sections as those just read out. Of these 32 bodies only two—so the council were informed—had a clause to the effect that a veterinary surgeon should accompany the medical officer of health, or be sent. He agreed with Mr. Greenhalgh that action should be taken, and it was his own opinion that they should seek the support of the Council of the Royal College, as well as local veterinary societies, in the matter. Through the strong pressure brought to bear by the veterinary profession some while back, the promoters of a Scotch Bill were unable to get a clause like one of those to which their attention had just been directed. It was absurd to think that anyone but a veterinary surgeon should be allowed to make the inspection.

Mr. COOKE likewise dwelt on the importance of the subject, and said there was not the slightest doubt that veterinary surgeons were the most competent men to perform the duties specified in the clauses, which appeared to him to have been drawn up by medical officers of health themselves. As a profession, veterinary surgeons were wholly ignored, and he thought that great pressure should be brought to bear to avoid such a thing being passed into law.

Mr. MCKINNA remarked that he was surprised at the audacity of a medical officer of health in drawing up such clauses without consulting the veterinary officers of the city. He could hardly understand such a proposal in an enlightened city like Leeds, and if it became necessary for the Lancashire Society to assist the Yorkshire Association in opposing it, they would not be slow in rendering that assistance. As had been truly remarked, the veterinary profession were ignored altogether.

Mr. CLARKSON pointed out that to the veterinary profession belonged the credit of the agitation which was taking place at the present time in regard to tuberculosis, and emphasised the importance of the profession being recognised by public bodies, especially having regard to its recognition in high quarters. The proposal of the Leeds Corporation was not only an ignoring of the profession, but another point worthy of every consideration was involved in it. If the inspection was not thorough and efficient, then the public would suffer. It would, he considered, be a good thing if a circular letter was sent from the society to the Council of the Royal College, asking them to move in the matter.

Mr. WHARAM said he had not the least fear that the veterinary profession would be ignored, but this feeling would not warrant them in keeping quiet. He thought that the omission of which they complained was due to ignorance. Medical officers, in forming these bye-laws, were very ignorant of the subject

in hand. They seemed to think that the tuberculin test was an exceedingly simple matter, and did not require professional knowledge; they had an idea that simply injecting the tuberculin and taking temperature were the only things necessary, and that they need not take into consideration any other disease from which a cow would be suffering at the same time. The only person really fit to make inspection was a veterinary surgeon. He agreed with Mr. Clarkson's concluding suggestions.

Mr. G. W. CARTER said to propose to ignore the veterinary profession in a matter of this kind was absurd, and he was quite satisfied that Parliament would not grant the proposal. The question of inspection in the borough where he lived had been settled without going to Parliament, and the arrangement comes into operation on the 25th of March next. A meeting of the Health Committee was convened, and he was invited to be present to give the members the benefit of any advice he had to offer. He believed the medical officer of health had a hand in the corporation taking that step. He advised that the corporation had no power for the compulsory application of the tuberculin test, and that to put such a clause in their bye-laws would render it of no effect whatever. He said that considerable service could no doubt be rendered to cowkeepers and the public by the periodical examination of the animals. The Health Committee concluded that he should be appointed veterinary inspector under the Corporation to visit all the milk sheds within the borough. They found they had no power to send him to visit outside the borough, but every farmer in the borough where milk was supplied had to be visited by him four times a year. If he found a suspicious case he had to impress on the farmer the necessity of isolation, and of not using the milk for human consumption. He concluded with a suggestion that the Corporation of Leeds should be approached.

Mr. SNARRY thought the Council of the Royal College should oppose the Leeds Bill in Parliament. If a medical officer of health was to take charge of the work of inspection he should be examined by the Royal College of Veterinary Surgeons with the view of ascertaining whether he was capable of undertaking it. It would be a great danger to the public health for any medical practitioner to take such a duty upon himself.

Mr. BOWES, while agreeing with Mr. Clarkson and Mr. Snarry, considered that local pressure should be brought to bear upon the Corporation. It was, he observed, an insult to the profession that the work of inspectors should be done by anyone but a veterinary surgeon.

Mr. MASON then formally introduced Mr. Carter's suggestion in a resolution, with the addition that a small committee be appointed to consult as to the drawing up of a communication to be forwarded to the Parliamentary Committee of the Leeds County Council.

This was seconded by Mr. Greenhalgh.

The PRESIDENT looked upon the subject as being the most important that had occupied their attention for a very long time. That diagnosing of tubercolosis was in many cases very difficult, and to place such work in the hands of a non-professional man was absurd. Moreover it was a blow to the veterinary profession. First of all their representation should be made to the local authority, but if they found that the Corporation were determined to persist in the proposal, then it would be the duty of the Council of the Royal College to approach the Board of Agriculture to see that the matter should not be passed into law. In Sheffield nothing of this sort had been brought before them and the medical officer of health had the supervision of the cows, but he generally called in a veterinary surgeon to his aid.

That resolution was then adopted, and the following gentlemen were appointed as the Committee :— Messrs. Mason, Greenhalgh, Clarkson, Wharam, and McCarmick.

Revised Rules.

The committee that had been appointed to revise the rules laid before the meeting the results of their revision, and the amended rules were adopted.

Presidential Address

MR. T. FLETCHER, HILLSBOROUGH.

Gentlemen,—My first duty as President of the Association for the ensuing year, is to thank you very much for the honour you have done me, and I assure you I feel it doubly so by the unanimous manner in which you elected me. I hope that at the end of my year of office you will not have cause to regret it. I am very sorry to tell you that age has thrust upon me one of her infirmities, deafness, so that I shall have to claim your kind forbearance if I do not answer all questions put to me, or seemingly neglect your remarks. I have no special or scientific subject or matter to lay before you to-day, nor have I any wish to torture you with any of my fads and opinions, as was done by a president in his opening address a few months back, with the knowledge or belief that his utterances were not by usage subject to discussion or criticism.

What I wish to do to-day is, if I am not out of order, to strike out a line for our guidance during the ensuing year.

After the ordinary routine business of the meeting, I advise that we shall consider and discuss the peculiarities of any morbid specimens that may be brought before the meeting, or any complex or difficult case that any member may have on hand, and thereby render such member any assistance we can, by what may be called a consultation. Who is there amongst us that is not occasionally puzzled by some obstinate complicated case, and who would not like the advice and assistance of a brother member as a friend? I think these meetings are the very place where such help should be found and given. I have no doubt there are young men who come to these meetings full of some troublesome case they have on hand, and go away, I may say, empty; that is to say, without advice or assistance from brother members. If you refer to the preamble of the rules you will find this is one of the objects of the society, and I shall be pleased to do what I can to carry it out. If any member hands up his slip of paper, with name to it, asking for a hearing, I will do my best to get a discussion upon it.

The next thing I wish to name is that we shall devote more time and attention to the therapeutical part of our profession. We have listened to long and exhaustive papers on pathology, but what about our papers on therapeutics and materia medica? When we hear or read of the great difference of opinions of the actions of various drugs, do you not think it is time we put our heads together and try, from our practical knowledge, to fix upon more uniform doses of various drugs? Well may the homœopathist laugh at the allopathist when he finds one man giving five drops of tinc. aconite, and another near five drams. Besides, this I think there is much useful information to impart to each other of the value of certain drugs which some of us have not heard of. But I do not wish you to think thut I have got a great budget full of wonders, for I have not, but if I get a little from you and you a little from me, we shall all benefit, so that I must ask some of you to bring us papers on this subject.

Besides these matters, which are more for the good of the public, our clients, than ourselves, we ought to consider our present day or financial position. Almost all branches of industry are improving their financial position, but

what is the case with the V.S.? Why, what with the Board of Agriculture, electricity and other motive power, the poor state of agriculture, the bills get less and less, so that I think we should not be wasting time in considering our financial position, and a short paper by some kind friend would, I think, greatly oblige, and cause discussion. I now thank you for your patient hearing, and repeat my thanks for the honour you have done me.

On the motion of Mr. MASON, and seconded by Mr. CLARKSON, a hearty vote of thanks was accorded to Mr. Fletcher for his address.

The Annual Dinner.

Subsequently the members, who were joined by a number of visitors, whose names have already been given, dined together, under the chairmanship of Mr. W. F. Greenhalgh, the retiring president.

The loyal and military toasts were proposed from the chair, and Mr. Mason, who shared the celebrated march to Candahar, and who now holds a commission in the Leeds Artillery, responded for "Army and Navy, and Reserve Forces."

The CHAIRMAN, in proposing "The Royal College of Veterinary Surgeons," observed that they were proud of the fact that this year's president of that institution was a member of the Yorkshire Society, and a country practitioner; during Mr. Mason's period of office everything had, so far, gone on smoothly; that veterinary surgeons in London were well represented on the Council, and he should like to see the provincial societies combine to send more representatives from the country to that body. The Yorkshire and Lancashire societies had hitherto combined, but he desired greater combination amongst the provincial societies. The question of expense in attending the meetings in London was no doubt a serious item, but he thought it was a difficulty which might be got over. He believed the Registration Committee had done and were doing a very good work. The Council ought, however, to have power to deal with the members of the Highland Society. He referred with satistion to the fact that the head of their profession had been invited to attend the recent conference meeting at Marlborough House, observing that by this courteous and appreciative act of the Prince of Wales they might be said to take a little step higher in the social scale.

Mr. MASON first replied to the toast. He expressed his deep sense of their kindness to him, and assured them that in the various positions he had filled he had always striven to do good for his profession generally. He thanked the Yorkshire members for the great support they had accorded to him on the occasion of the visit of the National Society to Leeds last year, when the attendance was, he believed, a record one. At the present gathering they missed the genial face of Principal Williams, one of the fathers of the Yorkshire Society, and deeply regretted the cause of his absence. The Council of the Royal College were only pleased to do anything they could to further the interests of the veterinary profession, and to consider the requests of the local societies. Any number of matters came before the Council, and it was only a few hours ago that a gentleman wanted to see if they could appoint a committee to consider the question of uniformity of fees. No doubt, some of the London fees would suit them in the country, but he did not think that the scheme for a uniformity of fees throughout the profession would be feasible. It was somewhat of an anomaly that they could strike off the Register the name of a practitioner as a member of the Royal College, but, that if he held the certificate of the Highland Society they could do nothing whatever. There would be a conference shortly, when he thought some scheme would be arrived at, whereby the members of the Highland Society

would come within the reach of the Council of the Royal College. The Registration Committee were doing all they possibly could to suppress evasion of the law by people forming veterinary medical companies, and were determined to put down advertising. Nothing would lower them more than advertising in the public press.

Mr. ABSON also responded, describing the Registration Committee as by far the most important Committee of the Council at the present time. It was, he added, doing a real service to the profession. There were, unfortunately, members who would not "go straight"—there were complaints received which could not be substantiated, but all the complaints were gone into thoroughly, irrespective of the individual against whom the complaint was made. Yorkshire was, he considered, singularly fortunate in seeing one of its members this year's president of the Royal College. Mr. Mason's conduct had, in his opinion, been that of an ideal president ; he endeavoured to show no favour, and up to now things had gone exceeding smoothly under his presidency.

In proposing "The examiners," Mr. COOKE regretted the absence of Mr. Woods. The examiners were men who did their duty well, and students that were turned out at the present time were very creditable to the profession. Some of them would probably be a little better if they had more practical experience.

Mr. WHARAM, in acknowledging the toast, said he had every confidence in the examiners, but he thought it was necessary to coach the students well, both in practical and theoretical knowledge, in order to get the best possible results at the examinations.

Mr. ABSON next submitted the toast of "The Veterinary Schools," remarking that these institutions had probably never been so efficiently managed as now. The teaching had probably never been so efficient, and *pro ratio*, the examinations had never been so difficult. Some of the schools had of late lived in troublous times. The four years' scheme had resulted in the curtailment of the number of students attending the schools, and another factor was probably the more stringent matriculation examination. No doubt things would level themselves up in the course of time, and they would reap the benefit by having a better class of members among them. He was sorry that Principal Williams was not present, for he was one of the most respected members of the Yorkshire Association.

Mr. CLARKSON, in response, joined in the expression of regret at the absence of Principal Williams, and the cause of it. One speaker had remarked that the examiners turned out a better class of students than was formerly the case, but some of the credit of that improvement should be given to the schools. He quite agreed with Mr. Abson that the schools were more efficient than in the past ; they had more definite lines to go upon, and, therefore, knew what to teach. To whom, he asked, was the efficiency of the schools due? Not to the help of State, but private enterprise, and Principal Williams justly deserved the medal that had just been presented to him by the Council of the Royal College. No one deserved the honour more. No one living had done more for the veterinary profession than Principal Williams. His teaching had not only been beneficial to his own students, but many practitioners in all parts of the country had added to their knowledge from his papers or conversation. He did not think there was a man in the veterinary profession who could compare with Principal Williams in breadth of conception. As a profession they were beginning to be more recognised, and they must look to the schools largely for maintaining and improving their position.

"Other Veterinary Medical Societies" was introduced by Mr. FLETCHER, who remarked upon the beneficial influence of these associations. He had

been a member of the Yorkshire Association for a number of years; he always enjoyed attending the meetings, and went home with something new on his mind. And perhaps he had left something fresh behind him. He was quite satisfied that these societies were a great help to the profession, the members of which never worked more harmoniously together than now, and he hoped that feeling would long continue.

Mr. McKINNA, in replying to the toast, expressed his own personal pleasure at the compliment which had been paid to Mr. Fletcher, and also congratulated the Yorkshire Association that one of their members was the President of the Royal College of Veterinary Surgeons. The question of money, he continued, ought not to deter them from having a proper representation of the provinces on the council, though he believed it had kept a good many of them from joining that body. He was proud to know that they had in the provinces professional men of culture and skill, and whose services had been appreciated by the council. He gave a cordial invitation to Yorkshire members to the annual dinner of the Lancashire Association, and alluded with satisfaction to the honour paid to the profession by the Prince of Wales.

Mr. R. COCKBURN also followed with a speech in response to the toast. He said he had no doubt that the Council of the Royal College took their cue to a large measure from the provincial veterinary medical societies. The Yorkshire Association were taking a proper course in having decided to memorialise the Leeds City Council in regard to the sanitary provisions of their new Parliamentary Bill. It was a shame that medical officers of health should usurp the functions of the veterinary profession, and it was time the latter asserted themselves.

Mr. MASON gave "The Veterinary Defence and Mutual Benevolent Society," recommending those who did not already belong to that institution to join.

Mr. FLETCHER then asked the company to honour a toast which was not included in the list—"The health of the Leeds members of the Yorkshire Association." He said they were greatly indebted to these gentlemen for many acts of kindness, and for their exertions in keeping up the interest in the Association.

The HON. SECRETARY acknowledged the compliment, and in doing so assured the gathering that the Leeds members did their best for the Association.

The next toast honoured was that of "The Chairman," at the invitation of Mr. Mason, who reminded them of the valuable service which Mr. Greenhalgh had rendered to the Association as secretary, a member of the committee, and president. Mr. Mason also urged the members to give greater support to the President of the year at the ordinary meetings of the Association.

The CHAIRMAN suitably returned thanks. He said it had always been his idea to make the Yorkshire Association paramount if possible. He had had a long connection with the Association, and his ambition to become President of it had been realised. He, too, enforced the desirability of members attending regularly the business meetings of the Association.

Mr. SNARRY submitted the concluding toast of "The Visitors," to which Mr. S. Parkinson, Mr. W. Atkinson, and Mr. J. Godfrey Long replied.

During the evening a capital programme of vocal music was contributed, and the arrangements of the hon. secretary and hon. treasurer were, as usual, admirable.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

Annual Meeting and Dinner.

The annual general meeting of this Association was held on Friday, February 17th, at the Great Western Hotel, Reading. The President (Mr. S. H. Slocock, of Hounslow) was in the chair, and there were also present, Messrs. J. Sutcliffe Hurndall, Kensington; G. E. King, Abingdon; T. W. Lepper, Aylesbury, vice-presidents; J. P. S. Walker, Oxford, hon. treasurer; E. Percival Owen, Thame, hon. secretary; Professor W. Pritchard, London; Sir Henry Simpson, Windsor; Messrs. A. L. Butters, London; Jas. East, Aylesbury; F. W. Hanks, Wantage; E. C. Howard, Newbury; P. Irving, Chipping Norton; E. J. Mellett, Henley-on-Thames; J. F. Simpson, Maidenhead; John Varney, Winslow; R. J. Verney, Oxford; J. H. Wilson, Newbury; W. Wilson, Berkhampstead; F. W. Wragg, London; and Messrs. Percy Simpson and Henry George Simpson (visitors).

The HON. SEC. read the minutes of the last meeting which were confirmed.

The HON. SEC. then read letters and telegrams of apology from Dr. Fleming, Professor McCall, Professor Williams, and Messrs. W. Hunting, Sydney Villar, G. A. Lepper, H. G. Lepper, McKerlie, Davidson, Mulvey, Emerton, Tutt, Hatch, Lawrence, Western, and Goodall.

Membership.

The resignation of Mr. F. W. Willett, of Staines, and Mr. J. B. Tutt, of Winchester, were accepted with regret, on the motion of Mr. W. WILSON, seconded by Mr. J. F. SIMPSON.

Mr. WRAGG gave notice that at the next meeting he would propose the election of Mr. Percy Simpson as a member of the profession.

Professor PRITCHARD, in accordance with notice, moved a resolution to the effect that all subscriptions should be paid in advance, but as it did not find a seconder, the motion fell to the ground.

The Voting of Funds.

Mr. G. E. KING had the following notice of motion on the agenda paper:—"That no subscriptions be voted from the funds of the association except by resolution, notice of which shall have been placed on the agenda paper." He brought the resolution forward, he said, to put the matter on a business footing. He thought every member should have notice if money was to be voted, but under the present rules five members—that number forming a quorum—might vote money without notice.

Mr. WRAGG seconded the resolution, which was carried unanimously, with the addition of the following rider, suggested by Mr. J. F. Simpson: "of any ordinary or special meeting called for the purpose."

The Victoria Benevolent Fund.

In reference to Mr. W. F. Barrett's circular letter, the HON. TREASURER moved that the matter be not discussed. The state of the association's funds would not admit of any subscriptions at present.

Professor PRITCHARD seconded, without saying anything about the funds again. Sir H. Simpson expressed the opinion that the National or Midland and the Victoria Association should amalgamate. He felt that in a small and poor profession like theirs they could not run two benevolent institutions.

Which was the better he did not undertake to say, but as a fact he had not subscribed to either. If there was an amalgamation he should be very willing to give a good substantial subscription. He moved as an amendment that in answer to Mr. Barrett's letter, that gentleman be referred to the resolution passed by the R.C.V.M.A. on the 9th July, 1897, in which it was clearly laid down that they favoured amalgamation.

Mr. HURNDALL thought the difference between the two societies was very fairly pointed out by Mr. Hunting in a "leader" in *The Veterinary Record* recently. He was rather doubtful whether the Managing Committee of the National Veterinary Benevolent Society would be willing to entertain the idea of amalgamating.

Mr. IRVING seconded the amendment, and it was carried, 11 voting for, and none against it.

The Fatality among Show Horses at Abingdon.

At the November meeting of the association Mr. J. P. S. Walker was requested by the then president to make a report to this meeting upon the extraordinary fatality among show horses at Abingdon, which he had investigated at the instance of the Oxfordshire County Police. The question was raised, however, that the matter was *sub judice*, and after some conversation Mr. Walker was asked to defer the reading of his paper by the majority of the meeting. He was heartily thanked for preparing it, however, on the motion of Professor PRITCHARD, seconded by Mr. J. H. WILSON.

Place of Next Meeting.

Mr. T. W. LEPPER proposed, and Mr. HOWARD seconded, that the summer meeting of the association be held at Henley-on-Thames, as last year, the date to be either June 23rd or June 30th as might be found most convenient, and the resolution was carried unanimously.

Mr. MELLETT said he would make the best arrangements he possibly could for the success of the meeting.

PRESIDENTIAL ADDRESS.

BY MR. SYDNEY H. SLOCOCK.

Gentlemen,—My first duty to you as members of the Royal Counties Veterinary Medical Association is to return you my sincere thanks for the great honour you have conferred on me in selecting me as your president for this year. Although I feel myself incompetent to carry out the duties of the chair in such a manner as I could wish, it shall be my great endeavour that this association shall continue its prosperous career, and no effort shall be wanting on my part to this end.

I am confident that I may expect from you all, during my year of office, the same generous support that you have always accorded to my predecessors, and I trust that each member will do his best to further the interests of our association by attending our meetings, and by freely giving us his views of the matters under discussion.

This association was inaugurated in November, 1883, and claims for its purposes: (1) The elevation of the profession; (2) the establishing and promoting a good and friendly understanding amongst its members; (3) the supervision and protection of their professional interests; and (4) the reading and discussion of scientific subjects relating to the theory and practice of veterinary medicine and surgery. I cannot conceive more laudable objects than these, and if we always bear them in mind not only our association but our profession will continue to advance.

If we take a retrospective glance at the position of our profession we cannot but feel gratified at the advancement we have made. The veterinary surgeon is gradually but surely forcing himself to that position which is justly his. Our scientists are acknowledged and are welcomed by the learned societies. We note with pride the position attained, and the glorious work done of late years by the Army Veterinary Department, and the flattering way in which its members are spoken of in dispatches. Our civil members are also making great social strides, and every now and then we see it recorded that some member of our profession has been appointed to municipal honour or to the commission of the peace, and the honour of knighthood is not unknown in the profession.

There are still constantly occurring necessities,for us to jealously watch over and protect our professional interests. It is only by keeping ourselves before the public that we shall obtain the monopoly of those positions for which the veterinary surgeon, by reason of his scientific training and his knowledge of animals, is specially qualified. Such duties as the inspection of meat, of cow-sheds, and of dairies should, undoubtedly, be carried out by the veterinary surgeon, and not, as is so frequently done, by the medical officer and sanitary inspector. An attempt was made last year to pass the Public Health (Scotland) Bill without a clause suggesting the calling in of veterinary aid, but, thanks to the opposition brought about by members of our profession, the Bill in that form was rejected, and failed to pass until our profession obtained its just recognition. From a report of the Yorkshire Veterinary Medical Association we learn that the Leeds Corporation are promoting a bill which shall give to the Medical Officer of Health, or any person acting under his written orders, the power to enter a cow-shed or dairy farm and to inspect, examine and apply the tuberculin test or other reasonable test, to any cow kept for the supply of milk, in order to determine whether such cow suffers from any disease which might render the use of the milk dangerous or injurious to health. The veterinary surgeon is totally ignored. This omission has happily been noticed by Mr. Greenhalgh, and not only has the matter been discussed at the society meeting, but it has been brought to the notice of the R.C.V.S., who will, doubtless, take the matter up strongly. Mr. Mason, the president of the R.C.V.S., mentions that 32 corporate bodies are applying for similar powers and of these 32 corporate bodies only two insert a clause to the effect that a veterinary surgeon should accompany the Medical Officer of Health. In this matter our thanks are clearly due to Mr. Greenhalgh and to the Yorkshire V.M.A. for their prompt action. These omissions are the more annoying for they tend, in some cases, to produce friction between the sister professions. I feel sure that it is not to the medical man we have to look for redress, for the members of that profession have always extended to us a helping hand and have encouraged the idea of the two professions working together.

It has been suggested that we should institute a new degree—open to veterinary practitioners, and which should designate its holders as persons eligible to hold the appointments of inspectors of meat, dairies, etc. This degree seems unnecessary, for the teaching at our schools has of late years been raised to such a high standard that all graduates must have acquired the knowledge requisite for such appointments.

The question of docking has recently been brought very prominently before us, not only by the Royal Society for the Prevention of Cruelty to Animals, but by the Royal Agricultural Society. The former society has threatened to prosecute any person, veterinary surgeon or not, found *mutilating* any horse by docking, unless such operation is necessary from disease or accident to the horse. This ultimatum of the Royal Society has, without doubt, made many veterinary surgeons hesitate or absolutely refuse to perform the operation, and

yet docking is carried out quite as frequently as ever. The consequence is that we, as veterinary surgeons, are frequently called to attend horses suffering from the effects of a rough butchering operation performed by dealers and grooms. This in itself proves that, so far, the society have caused, rather than prevented, the infliction of pain on horses. I maintain that the pain of the operation is very slight when performed by a skilful veterinary surgeon. The Royal Agricultural Society, at a recent meeting, carried the following motion by 25 votes to 21 :—

> That at and after the Maidstone meeting of 1899 no foals with docked tails be allowed to be exhibited at the society's country meeting; that at and after the meeting of 1900 the same shall apply to yearlings as well as foals, and that at and after the meeting of 1901 to two-year-olds also.

This motion was shortly after rescinded, owing to the powerful opposition of breeders and exhibitors. Had the rule come into force at Royal shows it would no doubt have been adopted by other societies, and we should soon have ceased to see exhibited the short docked, trimmed young animals which I consider may safely be termed mutilated. The enforcement of the rule would, no doubt, strengthen the hands of the R.S.P.C.A. Except for that reason I should like to see it have a fair trial, for I consider that it is unfair to deprive a colt of any part of his tail until after his third summer—that is at two and a-half years old, and one would then have more idea of what a colt would grow to, and whether or no docking is advisable. At the present time probably not five per cent. of the foals docked are docked by veterinary surgeons, to whose discretion the operation should be left.

I cannot conclude without complimenting the society on its happy selection of its honorary officers, for from its commencement it has needed but one honorary treasurer, Mr. J. P. S. Walker, who sticks loyally to us, and we have had but two honorary secretaries, Mr. H. Kidd and Mr. J. S. Hurndall, and we must admit that these gentlemen have in their long terms of office rendered invaluable assistance in the growth and management of our association. It is now evident to us that our new honorary secretary, Mr. P. Owen, has determined not to be excelled in zeal and, we hope, in length of service.

Let me now thank you for your patient attention, and let me again ask you to render me all the assistance you can by attending meetings, reading papers, and bringing forward cases of interest, and joining freely in the discussion, so that our meetings may be both enjoyable and instructive, and we may be able afterwards in our daily occupations to look back with pleasure to our social gatherings, feeling that we have not only gained knowledge, but have also made new friendships and renewed old ones.

Mr. HURNDALL proposed a hearty vote of thanks to the president for his very practical address; and Mr. KING had great pleasure in seconding it.

The resolution having been carried by hearty acclamation, Mr. SLOCOCK briefly returned thanks.

The Dinner.—Presentation to Mr. Hurndall.

After the business meeting, the gentlemen above named dined together at the hotel, on the hospitable invitation of the President, who filled the chair, Mr. Hurndall being in the vice-chair. They were joined at table by Dr. Holden, Dr. Wilcockson, and Messrs. Albert Wheatley, F.R.C.V.S. (who had been unable to attend the meeting), Wm. Ferguson, Giles Ayres, W. Bonny, R. L. Clarke, R. H. Bradley, E. King Deacon, and Arthur C. Butler.

The toasts of "The Queen," "The Prince and Princess of Wales, and other members of the Royal Family," were submitted from the chair.

Mr. HURNDALL proposed, and Lieutenant GILES AYRES, Royal Berks Yeomanry Cavalry, acknowledged, the toast of "The Navy, Army, and Reserve Forces."

Dr. HOLDEN gave the next toast—that of "The Veterinary Profession," saying that he and his brethren had a great respect for the veterinary profession, from whom he was sure, if they had the opportunity, they could learn much. He was greatly pleased to hear from Sir H. Simpson that there was a movement on foot in connection with the new Birmingham University to establish a chair and degrees in veterinary surgery and medicine, and he was strongly of opinion that similar chairs and degrees should be established at the older universities.

Mr. WRAGG suitably replied.

Mr. J. F. SIMPSON proposed the toast of the evening, "Success to the Royal Counties Veterinary Medical Association," which had done, and would, he believed, still do much useful work.

The PRESIDENT responded, and afterwards made a presentation to Mr. Hurndall, remarking that their friend undertook the duties of the secretaryship some 7 years ago, and only those who had filled similar positions could appreciate the amount of work entailed. In that responsible and arduous position Mr. Hurndall had simply left nothing to be desired. Seeing the good work he had done, it occurred to their late president (Mr. T. W. Lepper) that they should ask him to accept at their hands a small token of the regard they all had for him, and of their appreciaton of the work he had done for them. He had great pleasure in asking Mr. Hurndall to aceept the small present before him, and hoped that he might use that inkstand to write many acceptances to attend their meetings.

The present was a massive and beautifully-designed silver double inkstand, with cut glass bottles. It bore the following inscription :—" Presented by the members of the Royal Counties Veterinary Medical Association to J. Sutcliffe Hurndall, Esq., in recognition of valuable services as honorary secretary, 1891-98."

Mr. HURNDALL, who spoke with emotion, said he felt considerable difficulty in giving expression to his thoughts on that occasion. He would not be telling the exact truth if he said he had not heard that some token of their kindness was to be given him, but he could honestly say that he was taken by surprise that evening. Their kind appreciation of his very poor services was very valuable to him. He had always found that the work he had done as secretary for that association had been work of a most pleasurable character, inasmuch as all the members had co-operated to make the work of the secretary as easy as possible. In this case that was simply a statement of the honest truth from an honest heart. He accepted their kind gift with his best thanks, and trusted it would long remain in his house as a token of their kind thoughtfulness and appreciation.

The next toast—that of "The Medical Profession"—was entrusted to Sir Henry Simpson, who, in giving it, said veterinarians were only 50 or 60 years old as a profession, and in the early stages of their career they received the greatest support and encouragement from the members of the medical profession, and he believed the latter would always extend to them a helping hand. He believed there was room for both, and that the medical profession and the veterinary profession, having mutual regard the one for the other, were quite compatible with the order of things as they found them, and as they would be in the future. In matters of investigation, as they knew well, the medical profession had given them a lead; and he thought they would admit that veterinarians had been very arduous and assiduous followers in that lead. He trusted that good feeling would always remain, to a mutual advantage of both professions.

Dr. WILCOCKSON replied: When he was studying at Edinburgh, he said, he was very pleased to have two veterinary students as friends. Edinburgh was in advance of the other universities in that matter, for although the veterinary college was not attached to the University, their work, especially in pathology and chemistry, was most thorough—indeed the students did an immense amount of work before passing their examinations. He would much like to see the two professions in closer contact, for each might greatly help the other on such points as embryology, and in the big subject of pathology, especially in reference to lung diseases. Then they could help each other very much on the question of public health. He himself had the privilege of reporting the only case of anthrax in the human subject which had been recorded in Reading. That was the case of a butcher's son, who contracted the disease when—as it was found out afterwards—his father was buying two dead cows, which were actually being made into sausages at the time the boy was brought to him! He communicated with the veterinary surgeon and found that those cows, and also some pigs on the same farm, had died from anthrax, and also that the farmer was sending milk into the town, although other cattle were affected. In such cases the two professions could help each other greatly. He reminded them that they had fought together in the great question of army status; and asked what the charge at Omdurman would have been if the horses had been "crocks" and the men who rode them crocks also? He wished to see more meetings between members of the two professions, feeling sure that they could fight side by side for the public health—first of humanity and then of the animal kingdom.

The hon. SECRETARY read apologies from gentlemen invited to dine with the President, including Professor Williams, Dr. Fleming, Professor McCall, Mr. William Hunting (hon. associates), also Messrs. S. Villar, G. A. Lepper, H. G. Lepper, Davidson, McKerlie, Lawrence, Mulvey, Hatch, and Craft.

Mr. WM. WILSON gave the toast of "The Visitors," and Mr. WM. FERGUSON (who was Mayor of Reading at the time of the visit of the National Veterinary Association to the town) responded.

The other toasts were "The President and Officers of the R.C.V.M.A.," proposed by Mr. FERGUSON, and spoken to by the PRESIDENT, the hon. TREASURER, and the hon. SECRETARY; "The Host," given by the PRESIDENT, and acknowledged by Mr. FLANAGAN; and "The Press," proposed by Mr. HURNDALL and responded for by Mr. BUTLER.

Between the speeches some capital songs were rendered by Dr. Wilcockson and Messrs. E. P. Owen, W. Bonny, Hanks, G. Ayres, S. Harris, Bradley, and Flanagan, Mr. E. K. Deacon acting as pianist; and Mr. Butters gave a very amusing recitation.

TUBERCULOSIS IN ANIMALS.—At a meeting of the Farmer's Club, held last night at Salisbury Hotel, Fleet Street, a paper on "Tuberculosis in Animals of the Farm" was read by Professor Penberthy. Mr. E. K. Fisher presided. After briefly sketching the history of the disease, the lecturer said experiment had proved that the bodies of all animals of the farm afforded conditions favourable to the growth and development of the tubercle bacillus. Until 1894 the great obstacle to dealing with the disease in a radical manner lay in the fact that the majority of animals affected with tuberculosis yielded no distinctive symptoms; indeed, most frequently showed the bloom of health. The advent of tuberculin removed all the obstacles to diagnosis, but it was necessary to bear in mind that up to the present tuberculin merely told them what animals were and what were not tuberculous; it did not directly indicate what animals discharged bacilli, and were therefore dangerous,

though it might prove of material assistance in forming such an opinion. The question now arose—was it desirable to know whether farm animals were affected with tuberculosis, or to proceed on the old lines and disregard it? That there was a real danger of man contracting tuberculosis from drinking milk and eating flesh there could be no doubt, and the public had a right to demand that any article of commerce should be free from such danger. The cost of applying the tuberculin test was the only relief that the stock-owner had immediate prospect of. *Primâ facie* the trouble of isolation would cost him no less than if he had paid for the testing, while one could scarcely fail to see that the conditions under which the proposed gratuitous testing was to be carried out might be such as to affect seriously his convenience and his pocket. There was no cogent reason for delay, therefore, and he thought he was wisest who began at once to discover what animals in his herd were tuberculous, as he would thereby be able to check his losses caused by the disease, and place himself in a superior position as regarded disposal of his produce. A discussion followed, in which Mr. B. St. John Akers, Mr. Clare Sewell Read, Mr. T. Carrington Smith, and others took part.—*Times*, January 31st.

CONTAGIOUS DISEASES ANIMALS ACT, 1864 AND 1899.

SUMMARY OF RETURNS OF OUTBREAKS, for the four weeks ending February 11th, 1899.

ENGLAND AND WALES.

Pleuro-Pneumonia.	Swine Fever.	Glanders (including Farcy).	Rabies.	Anthrax.	Sheep-Scab (for month of January.)
None	Outbreaks 162 Slaughtered 2,387	Outbreaks 44 Attacked 79	Dogs 0 Other animals 0 Destroyed 4	Outbreaks 35 Attacked 57	Outbreaks 501

SCOTLAND.

None	Outbreaks 9 Slaughtered 147	Outbreaks 2 Attacked 15	None	Outbreaks 13 Attacked 13	Outbreaks 36

IRELAND.

None	Outbreaks 22 Slaughtered 258	None	Dogs 4 Other animals 2 Destroyed 3	None	Outbreaks 126

THE VETERINARY MUTUAL BENEVOLENT FUND—FINANCIAL STATEMENT, DECEMBER 31st, 1898.

Dr. Mr. EDWIN FAULKNER, Honorary Treasurer, in account with the Fund. *Cr.*

RECEIPTS.	£	s.	d.
1898.			
Jan. 1—To Cash at Bankers	151	5	6
Dec. 31—To Mersey Docks and Harbour Board, one year's Interest on Bond for £1,300 at 4 per cent. less tax ..	50	5	4
„ Mersey Docks and Harbour Board, one year's Interest on Bond for £600 at 3⅛ per cent. less tax ..	20	6	0
„ Manchester Corporation Improvement Department, one Year's Interest on Mortgage for £900 at 3 per cent. less tax	26	2	0
„ Corporation of Salford Gas Department, one Year's Interest on Loan of £600 at 2⅝ per cent. less tax ..	15	4	6
„ Bank Interest	3	0	5
	£266	3	9

PAYMENTS.	£	s.	d.
1898.			
Nov. 8—By Cobbett, Wheeler & Cobbett—Solicitor's Charges *re* Appointment of New Trustee, Transfer Deeds, and re-investments	7	5	0
Dec. 31—By Cash at Bankers	258	18	9
	£266	3	9

INVESTMENTS.

	£	s.	d.
Mersey Docks and Harbour Board—4 per cent. Bond No. 71,621, dated July 2nd, 1880; repayable 1st July, 1900	1,300	0	0
Mersey Docks and Harbour Board—3½ per cent. Bond No. 77,534, dated March 6th, 1883; repayable 27th March, 1911	600	0	0

	£	s.	d.
Manchester Corporation Improvement Department—3 per cent. Mortgage No. 460, dated October 2nd, 1890; repayable 29th September, 1900	900	0	0
Salford Corporation Gas Fund—2⅝ per cent. Mortgage Bond, No. 2,233, dated January 13th, 1897; repayable 13th January, 1900	600	0	0
	£3,400	0	0

We have examined the above written Account, and certify the same to be correct.

17*th January*, 1899.

ALFRED H. POWNALL, F.C.A.
JNO. B. WOLSTENHOLME.

THE VETERINARY MUTUAL DEFENCE FUND—FINANCIAL STATEMENT, DECEMBER 31st, 1898.

Dr. Mr. EDWIN FAULKNER, Honorary Treasurer, Knott Mill, Manchester, in account with the Fund. *Cr.*

RECEIPTS.				PAYMENTS.			
1898.	£	s.	d.	1898.	£	s.	d.
Jan. 1—To Balance at Bankers	456	18	10	Dec. 31—By Hire of Rooms	1	0	0
„ Balance in the hands of the Treasurer	1	13	7½	„ Stationery and Printing	14	11	6
„ Subscriptions received 1898, as per List	130	14	6	„ Solicitor's Costs	12	12	0
„ Bank Interest	7	10	4	„ Secretary's Postages and Expenses ..	1	5	0
„ Balance due to Treasurer	3	11	11½	„ Out of Pockets in Dowdeswell *v.* Farrow	1	1	0
				„ Balance at Bankers	569	19	9
	£600	9	3		£600	9	3

We have examined the above written Account, and certify the same to be correct.

17*th January*, 1899.

ALFRED H. POWNALL, F.C.A.
JNO. B. WOLSTENHOLME.

REPORT ON THE WORKING OF THE ARMY VETERINARY DEPARTMENT WITH THE TIRAH EXPEDITIONARY FORCE, 1897–98.

BY VET. LIEUT.-COL. GLOVER.

WE append some extracts from this valuable report which we think will interest our readers, and beg to thank the Director-General of the Army Veterinary Department for his courtesy in forwarding us this most interesting report.

In compliance with the instructions contained in your communication dated the 11th January last, I have the honour to submit the following detailed report on the working of the Veterinary Department of the Tirah Expeditionary Force, from the 1st October, 1897, to the 6th of April, 1898, both dates inclusive.

5. Having ascertained that Kohat would be the base of the coming operations, I communicated with the Commissary General, Punjab Command, asking that Bazaar Veterinary supplies on the scale laid down in the Field Service Departmental Code, Veterinary, be collected at Kohat and maintained there on that scale during the operations.

7. The Veterinary Officers detailed for duty with the Expeditionary Force and their appointments were as follows :—

Army Staff.

Inspecting Veterinary Officer — Veterinary-Lieutenant-Colonel B. L. Glover.

Line of Communication.

Veterinary Inspector .. — Veterinary-Captain F. W. Forsdyke.

1st Brigade, 1st Division.

Veterinary Officer .. .. — Veterinary-Lieutenant W. J. Tatam.

2nd Brigade, 1st Division.

Veterinary Officer .. .. — Veterinary-Lieutenant W. F. Shore.

1st Brigade, 2nd Division.

Veterinary Officer .. .. — Veterinary-Lieutenant C. Rose.

2nd Brigade, 2nd Division.

Veterinary Officer .. .. — Veterinary-Lieutenant F. W. Wilson.

Peshawar Column.

Veterinary Officer .. .. — Veterinary-Lieutenant F. W. Carr.

Kurram Column.

Veterinary Officer .. .. — Veterinary-Lieutenant W. N. Wright.

Rawal Pindi Reserve Brigade.

Veterinary Officer .. .. — Veterinary-Lieutenant W. S. Anthony.

No. 5, Field Veterinary Hospital .. .. .. — Veterinary-Captain A. E. Richardson. Veterinary-Lieutenant R. H. Holmes.

8. Later on Veterinary-Lieutenant Barry in charge of "A" Section No. 3 Field Veterinary Hospital, from Kurachi, joined the expedition.

9. This gave a total of twelve Veterinary Officers, one administrative and eleven executive, but the Veterinary Officer appointed to the Rawal Pindi Reserve Brigade did not do duty with the force, as that Brigade never came under the orders of the General Officer Commanding the Tirah Expeditionary Force; so that there were really only ten executive Veterinary Officers actually belonging to or doing duty with the expedition.

10. On my way to Kohat I inspected the transport animals at Kushalgarh, on the 29th September, and made arrangements for the future Veterinary charge of this the railway base.

11. Having reported my arrival at Kohat, I immediately placed myself in communication with the heads of the Supply and Transport Department as laid down in paragraph 52, Field Service Departmental Code, Veterinary, and made arrangements with the Chief Transport Officer for my inspection of all transport animals collected at Kohat.

12. The state furnished to me by this officer showed, on the 30th September, a total of 28,662 transport animals, hired and Government, then with the expedition, which, together with the animals belonging to regiments and batteries, gave a total of, roughly, 34,000 animals with the Expeditionary Force at this early period.

13. The total was, approximately, made up as follows:—

Horses	2,923
Mules or ponies	15,226
Donkeys	7,934
Bullocks	2,156
Camels	5,754

14. Operations had been going on close to Kohat and on the Samana for some time previous to my arrival, Veterinary arrangements for this period were looked after by Veterinary-Lieutenants Rose and Wilson.

15. These two officers I therefore found at Kohat on my arrival there on the 30th September, and I immediately commenced allotting duties for the time being. Veterinary-Lieutenant Rose was placed in charge of the transport lines, and Veterinary-Lieutenant Wilson was, with other duty, to have the inspection of animals joining the expedition from the Kushalgarh side.

16. Although every animal was inspected and passed by Veterinary Lieutenant Shore at Kushalgarh, it was considered advisable to have them again inspected before entering Kohat. They were, therefore, stopped at the bridge just outside the station on the Kushalgarh road, and a Veterinary officer with a staff of salutries inspected and passed them before they were allowed to enter the transport lines.

17. No. 5 Field Veterinary Hospital, in charge of Veterinary-Captain Richardson, arrived at Kohat on the 1st October, and a suitable site having been alloted to it, immediately commenced its duties.

18. The Kohat returns for September showed 407 cases remaining on the 30th of that month. These were mostly surgical cases, and a large majority of them were at once admitted to the Field Veterinary Hospital.

19. On the 4th October, the date on which I commenced inspecting the transport animals at Kohat, there were, roughly, a total of 20,000 animals, Government and hired, collected there. This total was made up as follows: Mules or ponies 8,658, donkeys 5,249, bullocks 2,743, camels 3,350.

20. At this period, however, the number of animals at Kohat varied considerably from day to day, and the above must be looked upon as an evening or morning state, before or after the day's work; fresh arrivals were daily

coming in from Kushalgarh and, as quickly, animals were being despatched to the front.

21. On the date just mentioned, in company with the Chief Transport Officer, I inspected all the ponies and mules at Kohat. The latter I thought satisfactory both as regards stamp and condition, but the ponies, on the whole, were indifferent, many of them being physically unsuitable for army pack purposes, and a large number of them in very poor condition.

22. Every allowance, however, must be made for the almost, unprecedented state of affairs, making the difficulty of providing transport animals for such a large force as the Tirah Expedition, a very serious one.

23. On the 5th October I inspected the donkeys, bullocks, and camels, all of which I considered, on the whole, satisfactory. A large number of the donkeys I thought too small for the two-maund load, though, as afterwards will be shown, these little animals did wonderful work.

24. At this period there was little actual sickness among the transport animals, but a large number, chiefly ponies, were inefficient from sore-backs and debility.

25. I was not long at Kohat before being struck with the fact that the transport department had a great difficulty to contend with in not having a properly organised transport corps, and the animals suffered in consequence of not having proper and sufficient attendance. The "drabies" appeared to be all sorts and conditions of men, except perhaps those accustomed to, or who had any knowledge of, the animals they were looking after.

26. There was also, I considered, a great want of European supervision, owing, I was informed, to the small number of officers and non-commissioned officers at the time with the Transport Department.

27. It is no easy matter, on a campaign, to get animals into condition when they have once fallen off, and everything, I think, should be done to prevent such occurring. The main step in this direction is to have an efficient organisation, both as regards numbers and capability, ready to take over animals and properly care for them. What generally occurs is that the animals come first, and the organisation and care some time after, and when loss of condition, and deterioration generally, has taken place.

28. On the 5th October I inspected the herd of slaughter cattle, 400 in number, and among which a mild type of foot-and-mouth disease had for some time existed. Veterinary-Lieutenant Wilson had been in charge of the herd for some weeks, and both he and Veterinary-Lieutenant Rose exerted themselves successfully in keeping the disease confined to the slaughter cattle, for up to this time no cases had occurred among the transport animals. Veterinary-Lieutenant Wilson was still to remain in charge of the slaughter cattle, and to continue unrelaxed all precautionary measures towards preventing the disease spreading.

29. The supply of horse and pony shoes was the next matter I exercised myself about, and in communication with the Ordnance Department satisfactory arrangements were eventually made. The Commissariat-Transport Department, however, hold themselves responsible for the shoeing of their own transport animals, and they had already begun to make preparations, but these struck me as being far short of what they should have been, particularly so with such a large pony transport.

30. Veterinary arrangements were made for the head-quarter staff which had a strength in animals of roughly 618. Two universal field veterinary chests were issued for use with it; a bazaar supply of medicines and necessaries was obtained, and reliable salutries and nalbunds posted to it. The head-quarter staff was therefore made as far as possible independent in itself as regard veterinary requirements.

43. At Shinawari, where I arrived on the 19th October, there was a large

accumulation of animals, chiefly those belonging to the 1st and 2nd Brigades, 2nd Division. There was also a considerable number of ponies, mules and donkeys in the depôt transport lines, but these were in anything but a fit condition to begin a campaign, the ponies especially being in miserably poor condition and a large number on the sick list with sore-backs, or from debility.

44. At Shinawari the want of a properly organised transport corps, the useless character of the majority of the "drabies," and the want of sufficient European supervision was even more apparent than at Kohat, and I am convinced that these shortcomings alone, in a very great measure accounted for the very unsatisfactory condition of a large number of the animals at this the early stage of the campaign.

47. Having completed these inspections and made all necessary arrangements at Shinawari, I rejoined headquarters again on the 25th of October at Karappa, where the old four Brigades were concentrated for the time being.

48. At this camp, a considerable number of casualties occurred among the animals owing to the enemy "sniping" the camp, In this way the General Officer Commanding the Artillery lost his charger on the night of the 25th. One of the headquarter mules was also killed and several wounded.

50. The march from Shinawari to Karappa was a most trying one for transport animals, especially for those belonging to the 1st and 2nd Brigades, 2nd Division. These two Brigades left Shinawari early on the morning of the 20th the orders being for animals to be loaded up to 5 a.m. Owing to the action of Dargai, the transport did not reach the Chagru Kotal till well on in the evening and some of it, did not, I understand, get as far that day. The transport animals of these two brigades must, therefore, have been loaded up for at least 12 or 14 hours on a stretch, the distance covered being not more than from three to five miles. Veterinary-Lieutenant Rose, 1st Brigade, 2nd Division, reports of this day's work. "The animals had a most trying time being all day and night without water and till late at night with their loads on."

61. On the whole the advance of the two divisions into Tirah must from a veterinary point of view be pronounced to have been fairly successful. Little or no actual sickness, further than what was the result of hard work and privation on already debilitated frames, existed in the force, and no infectious or contagious disease had as yet made its appearance. Roughly, eight per cent. of the transport animals were cast as being considered temporarily or permanently unfit. Of this percentage six per cent. may be put down for ponies. The unfit mules were very few and most of the donkeys were rejected as being under sized and not up to the two maund load.

87. On the 29th December, Army Head-Quarters moved to Peshawar, and by the middle of January all active operations had practically terminated. A blockade was established along the frontier.

89. The force still kept free from zymotic disease and actual sickness of any consequence, but by the end of January scabies had become general throughout the whole force, bullocks and camels being affected as well as equines, and I consider it fortunate that the disease had not shown itself to a serious extent before this period.

90. Orders were issued to Brigade Veterinary Officers to send all animals attacked with scabies to the Base Veterinary Hospital, and among other precautions, the backs of all mules and ponies were recommended to be clipped, as it was found that the disease generally began under the saddle.

107. On the 9th March, two cases of glanders were reported by the Base Veterinary Officer, the animals being two mules that had been under treatment for scabies in the Base Veterinary Hospital at Budni, but having recently become affected with catarrh of a suspicious nature were segregated

and under observation. These animals were destroyed, *post-mortem* examination confirming the diagnosis of glanders.

108. Owing to the occurrence of these cases of glanders all precautions were taken, and Veterinary Officers received instructions to at once make a careful inspection of all equines in their charge, with a view to detecting glanders-farcy. The result was that one more pronounced case and two suspicious cases were found among the animals at Budni. The pronounced case was at once destroyed, *post-mortem* examination confirming diagnosis. The two suspicious cases were segregated and kept under observation, but were, as a precautionary measure, eventually destroyed.

109. Reports from Brigade Veterinary Officers were satisfactory in so far that the critical and searching inspection failed to find a single symptom of glanders-farcy in any of the animals at the time with brigades.

110. Some mallein was applied for and received, and careful and constant inspections of all animals at Budni were for some time carried out, but no more cases, suspicious or otherwise, occurred, and the outbreak if it may be called so, began and ended with the three confirmed cases, and the two suspicious ones above alluded to.

Food and Water Supply for Animals.

135. The forage and grain supplied by the Commissariat Department was, on the whole, of good quality. The forage at various times consisted of locally obtained churry, grass, and bhoosa, and bale hay and bale bhoosa, which latter were imported from a distance.

136. After leaving Kohat, locally obtained churry and bhoosa, or bale hay or bale bhoosa, constituted the forage ration, little or no supply of grass being obtainable. Once the force left the advance base, Shinawari, the animals depended almost entirely on the forage and grain brought in by foraging parties; churry, bhoosa, indian corn, barley, and wheat were fairly plentiful, and the animals did well for the time. The Mastura and Maidan Valleys were found to be well stocked with the above foods, but little or no grass or hay was obtainable, though these valleys must be capable of producing plenty of both. I noticed "dhoob" grass growing rather plentifully, chiefly on the banks separating the terraced fields. At Maidan, the transport animals, especially the ponies, picked up in condition for the first week or two, but eventually the supply of forage and grain became scanty, and the transport animals, ponies in particular, began to suffer in consequence.

137. As regards the supply of grain and forage obtained by foraging parties, I often noticed that the supply depended a good deal on as to what corps the animals belonged. Mountain Batteries, it was found, always had an ample supply of forage and grain, whereas the transport animals at the same time were often on short rations. The depôt transport animals, and those belonging to field hospitals, appeared to fare the worst, or those of regiments which were not as good foragers as other regiments.

138. The system of foraging with a view to individual interests, consequently, struck me as being very faulty, particularly so when grain and forage became somewhat scarce. I therefore think that it would have been a good thing had a central godown been established into which all grain and forage brought in by foraging parties would have been collected, and from there issued to corps and units, a fair distribution all round thereby being insured.

140. The grain ration issued by the Commissariat Department, independent of kind, quality or quantity, was very often anything but satisfactory owing to the want of proper grinding or crushing before being given to the animals. Gram, barley, and Indian corn are notoriously injurious foods for animals

when given in a whole or uncrushed or unsoaked state, and, putting the injuriousness aside, it is well known that these grains given whole or unsoaked are not properly assimilated by animals, especially if those animals be in a weak or impoverished condition.

141. If the grain can be soaked properly it will, doubtless, answer equally as well as crushing or grinding. Soaking, however, takes time, and the water has probably to be brought from a distance, entailing a certain amount of labour, and if water is at all scarce the soaking of grain may not be practicable.

142. The proper grinding or crushing of grain, therefore, should, I consider, be looked upon as an absolute necessity on field service. I am aware that the gram and barley issued by the Commissariat Department were on many occasions supposed to be ground, but the grinding was done very imperfectly, a large proportion of the grains remaining whole.

143. I would suggest the advisability of having on future campaigns large crushing machines, suitable for being worked by animal power, at the base, along the line of communications and at all standing camps, for the purpose of properly carrying out this important preparation of the grain ration.

144. Constant reports were being received from Veterinary Officers of the grain either not being crushed at all, or only partially so, and on several occasions intestinal disease, such as colic and enteritis, were reported as arising from animals being fed on uncrushed gram or barley. I would therefore strongly recommend that in future, on field service, the proper grinding or crushing of grain receives more attention than what it appears to have hitherto received. The neglect of it accounts for a good deal of the loss of condition so often seen in transport animals. None but properly crushed or ground grain should be given to animals on service, and, as the force advances, one of the first arrangements to receive attention should be this preparation of the grain food of animals.

145. I am aware that crushed grain does not keep so well as grain in a whole state, and that it is more liable to injury by wet, but if the grinding or crushing was carried out at, or as near as possible to, the place of issue for rations, a great deal of these drawbacks would disappear.

146. Shortly after my arrival at Kohat, I asked the Commissiary-General to make arrangements for a liberal supply of bran. This was in every way carried out, the supply being quite up to requirements, and the bran supplied being, as a rule, of fairly good quality.

147. The water-supply for animals on the expedition was at most places good and plentiful. At some of the camps, however, it was both scanty and indifferent. At Shinawari, during the time brigades were concentrated there, the water-supply was anything but plentiful, and not very good. Karappa had a plentiful river supply, but containing, as it appears to have done, saline impurities, animals very often suffered from diarrhœa. At Mastura, the river of the same name afforded a plentiful supply of beautiful water.

Transport Animals.

150. Ponies, mules, donkeys, bullocks and camels constituted the animal transport of the expedition. From Khusalgarh to the advance base, Shinawari, a cart road existed. From Shinawari to Maidan wheeled transport was out of the question, and pack and camel transport had to be depended upon.

152. The total number of transport animals with the expedition was approximately 68,601.

153. The pony transport was not as satisfactory or efficient as it might have been. There are a good many reasons to account for this state of affairs, and it must be remembered that placing in the field beforehand the

expedition to Tochi and the Malakand Field Force, added considerably to the difficulty of providing transport animals for the Tirah expedition. Every allowance, therefore, should, I consider, be made for circumstances over which there was no control.

154. The two causes which chiefly led up to inefficiency were, that ponies were purchased which were physically unfit in every way for army pack animals, and that a large number of the ponies had apparently fallen off in condition shortly after they had been purchased, and they could not pick up again before the advance took place.

155. Even allowing for the difficulty that must have existed towards getting together such a large number of transport ponies in a short space of time, I consider there was not sufficient judgment exercised in selecting the ponies. As regards the falling off in condition, I attribute this entirely to the want of organisation for the proper care of transport animals. Ponies were purchased and collected at certain places, they were then loaded in trains which, I believe in many instances, took double the time that it was expected they would take to arrive at Kushalgarh the collecting centre. Under such circumstances, defective feeding and watering arrangements probably added considerably to the trying nature of the railway journey many of these animals had in the month of September. At Kushalgarh they had to be taken into work at once in carrying stores to Kohat, and at Kohat the arrangements for the care of transport animals as already pointed out were not very satisfactory Under the circumstances no other result than a serious falling off in the condition of these animals could have been looked for.

(*To be continued.*)

"AN IMPROVED INSEMINATOR."

AS USED BY C. C. HOADLEY AND HIS ASSISTANT, A. S. HEAD, M.R.C.V.S.

THE above woodcut represents what we consider a great improvement to any yet introduced to the Veterinary profession.

The original idea of the syringe belongs to Messrs. ARNOLD & Sons, but the addition of rings to be used with the plunger is ours, by the aid of these rings, there is not the least difficulty in being able to use the instrument. The syringe we consider to be far preferable to a rubber ball, it is easily adjusted to the metal tube and can be worked by one hand. One can at once see the quantity of semen taken up, and the syringe is easily taken to pieces for cleaning.

The instrument is made by Messrs. ARNOLD & Sons, London.

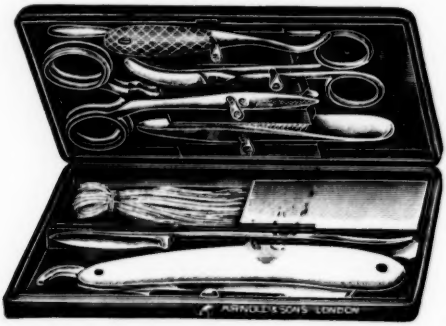
Notes and News.

At a council meeting of the British Dairy Farmers' Association, the committee on tuberculosis reported that, in view of the alleged large prevalence of tuberculous milk, they considered it desirable to take steps to ascertain the extent to which this form of contamination exists. They therefore recommend that Professor Wortley Axe, as veterinary adviser to the association, make an examination of as many herds of dairy cattle as he can conveniently inspect up to April 30th and report to the committee the numbers affected with generalised tuberculosis, with tuberculosis of the udder, and also with incipient tuberculosis as diagnosed by the tuberculin test. Three samples of milk are to be taken from each infected cow, one being sent to the secretary, one to the society's chemist (Mr. Lloyd), and one retained by Professor Axe himself. Mr. Lloyd will make a bacteriological examination of each sample and a chemical analysis also in all cases in which the milk is that of a cow affected with generalised tuberculosis and tuberculosis of the udder. In addition, Professor Axe will conduct inoculation experiments with the samples retained by him. At the suggestion of Colonel Curtis-Hayward the committee has undertaken to consider the question of the desirability of its being made an offence for any unauthorised person to sell or be in possession of tuberculin. Professor Carroll has been elected chairman of the conference committee, and it is proposed to devote nine days to the forthcoming conference in Ireland, commencing in the first week of June.

Oleander as a Poisonous Plant.—D. A., District Vryburg.—*Nerium Oleander*, L., well known in gardens by its specific name only, is actually poisonous, and has been the subject of research by many pharmacologists. The active principle in the leaves resembles that of *Digitalis*, the foxglove, and reacts directly upon the heart, stopping its action at the moment of expansion. As little as ·25 of a milligramme is sufficient to paralyse the movement of the heart in a lively frog. In the *Gardeners' Chronicle* for May 28, 1881, p. 696, there is quoted the case of a fine healthy mare being poisoned and dying within twenty-four hours after eating a single tuft of the leaves. An instance is recorded of a party of twelve soldiers who cut from an oleander tree skewers on which to roast their ration of meat, and the poisonous principle transferred to the food proved fatal to seven out of the number. The oleander is a native of the whole Mediterranean region, and is one of the most widely cultivated ornamental shrubs throughout the temperate zone. *Nerium odorum*, L., the "Kunnar" of India, possesses similar poisonous properties, the bark of the root being especially virulent. It is the commonest rat-poison used in the presidency of Bombay, and has often been brought into notice as the drug employed in cases of suicide. Like our own *Kafir Giftboom*, *Acocanthera venenata*, which it much resembles in toxic character, it has a reputation as a cure for snake-bite. I do not think that, in respect of the two species of oleander, anything in the way of legislation is called for. *Cestrum* has has been proclaimed as a noxious plant, and is under order for extermination in several divisions. But I am inclined to deprecate the custom of running to the legislature to provide protection where every man's ordinary information and common sense should be sufficient for the safety of himself and his belongings; and so long as we let the *Stramonium* and the *Nicotiana glauca* spring up everywhere around our cultivated lands it hardly seems reasonable to cry out against the oleander in our gardens on account of possible harm from its poisonous properties.—P. M. O.

A NEURECTOMY CASE.

BY FREDK. HOBDAY, F.R.C.V.S., ROYAL VETERINARY COLLEGE, LONDON.



By my suggestion, Messrs. Arnold & Sons have placed together in a convenient case, a set of instruments especially intended for the performance of the operations of Median and Tibial Neurectomy.

The case includes a razor, scalpel with asceptic handle, one pair of forceps, two pairs of artery forceps, a director, Simpson's tenaculum, a pair of curved scissors, needles in a metal box, and silk. These are the instruments we find most convenient to have at hand when performing Neurectomy, particularly when operating upon either the Median or Tibial nerves.

THE SANITARY INSTITUTE.

A SESSIONAL MEETING of the Institute will be held at the Parkes Museum, on Wednesday, March 8th, at 8 p.m., when a discussion will be opened on "The Establishment of Public Abattoirs in the Metropolis in relation to the prevention of Tuberculosis," by William Arthur Bond, M.A., M.D., B.Sc. Camb., D.P.H, M.O.H., Holborn. (Member).

Tickets for the admission of visitors may be had on application.

E. WHITE WALLIS,
Secretary.

Communications, Books, Journals, etc., Received.

Veterinarian; Record; British Medical Journal; Lancet; Report of the Bombay Veterinary College for year 1897-98; Chemist and Druggist; Bulletin of The John Hopkins Hospital; The Journal of Comparative Medicine and Veterinary Archives; The Scottish Medical and Surgical Journal; American Veterinary Review; Cattle Tuberculosis, by T. M. Legge, M.A., M.D., D.P.H.; The Public Health Journal; The Journal of the Jamaica Agricultural Society; The Surveyor; The Photogram; Queensland Agricultural Gazette; Petersburg Veterinary Society's Journal; C. H. Huish, H. J. Dawes, H. Locke, C. T. Kingzett, F.I.C.; Irish Times; Bulletin U. S. Department of Agriculture—Sheep Scab; Tuberculosis in Dairy Stock, R. A. S., England; Revista Veterinaria (Vitoria); La Riforma Veterinaria (Naples); Recueil de Médecine Vétérinaire (Alfort); L'Echo Vétérinaire (Liège); Annales de Médecine Vétérinaire (Brussels); Berliner Thierärztliche Wochenschrift (Berlin); Deutsche Thierärztliche Wochenschrift (Hannover and Karlsruhe); La Clinica Veterinaria (Milan); La Revista Veterinaria (Buenos Aires); Agricultural Journal (Cape Town); Bulletin de la Société des Sciences (Bucarest).